

# Copyrights

Text, illustrations and examples have been produced with great care. The editor is neither legally nor in any other way liable for incorrect information given and its possible consequences.

This document is protected by copyright. All rights reserved. Without written approval no part of this document may be reproduced through photocopying, microfilming or any other procedure, nor may it be translated into a language used by machines, especially data-processing plants. Rights are likewise reserved for quotation in lectures, on radio and television.

Microsoft, Windows, Windows NT, Windows 2000, Windows 7, Windows XP, Windows Vista, Windows 2003 and Windows 2008 R2 are registered trademarks of Microsoft Corporation, Redmond, USA. O&O and the O&O-logo are registered trademarks of the O&O Software GmbH, Berlin.

Rev. 24/09/200912:25

©1997-2009 O&O Software GmbH • Am Borsigturm 48 • 13507 Berlin • Germany

<http://www.oo-software.com>

# Contents

---

<b>About O&amp;O Defrag 12</b> .....	<b>1</b>
Overview of new and known functions .....	2
Three different Editions: Professional, Workstation and Server .....	3
Other Features of the Server and Workstation Edition .....	3
<b>System Requirements</b> .....	<b>5</b>
<b>Installation</b> .....	<b>7</b>
Note about Licensing .....	7
Entering the license .....	7
Using the test version .....	8
Uninstall .....	8
Installing Updates of O&O Defrag .....	9
<b>Online-Registration</b> .....	<b>10</b>
What are the advantages of online registration at O&O? .....	10
How does online registration work? .....	11
<b>Getting started</b> .....	<b>12</b>
O&O OneClickDefrag .....	13
Analyzing your Drives .....	14
Starting an Analysis .....	15
Defragmenting Your Drives .....	15
Defragment Single Drives .....	15
Defragment an Entire Computer .....	15
Defragmenting individual files and folders .....	16
Recommendations for Your First Defragmentation .....	16
Selection of the defragmentation method .....	16
Background monitoring .....	18
<b>User Interface (GUI)</b> .....	<b>21</b>
Ribbon Bar .....	21
Drive List .....	21

---

Block View.....	22
Job View.....	23
Reports.....	23
Drive Status.....	24
File status.....	25
O&O ClusterInspector.....	26
View File Status.....	27
O&O Defrag Screen Saver.....	27
<b>Settings.....</b>	<b>30</b>
General.....	30
Online- and Offline-Defragmentation.....	32
Offline Defragmentation.....	32
Continue Working During Defragmentation.....	33
Tuning.....	34
Zone filing.....	35
User-defined zone filing.....	36
<b>Previous defragmentation methods.....</b>	<b>39</b>
Conflicts with Shadow Copies during Defragmentation.....	40
STEALTH Method.....	41
Algorithm.....	42
Recommended Application.....	42
SPACE Method.....	42
Algorithm.....	42
Recommended Application.....	42
COMPLETE/Access Method.....	43
Algorithm.....	43
Recommended Application.....	43
COMPLETE/Modified Method.....	43
Algorithm.....	44

---

Recommended Application .....	44
COMPLETE/Name Method .....	44
Algorithm .....	44
Recommended Application .....	45
<b>Set up periodic defragmentation .....</b>	<b>46</b>
Creating New Jobs .....	46
Name .....	46
Schedule .....	47
Screen Saver Mode .....	48
Drives .....	49
General .....	50
Tuning .....	51
Running batches before and after a job .....	52
Duplicate job .....	53
Changing a Job .....	54
Deleting a Job .....	54
Work within the network .....	54
Firewall settings .....	54
Connect to networkNetwork .....	56
<b>Status Reports .....</b>	<b>58</b>
Creating Status Reports .....	58
Evaluating Status Reports .....	58
Deleting Status Reports .....	59
<b>Technical Information .....</b>	<b>60</b>
Using the Command Line Version .....	60
Call .....	60
Parameter .....	61
Status notices and program output .....	62
Event Logging of Online Defragmentation .....	62

---

Notices from Offline Defragmentation .....	62
Data Security and Integrity.....	63
Supported Hardware.....	63
RAID.....	64
Supported File Systems.....	64
Free Space Needed for Defragmentation .....	65
Size of the Allocation Units.....	65
Size of Drive .....	65
Folders.....	65
Free Hard Disk Space.....	65
<b>Recommendations and Frequently Asked Questions.....</b>	<b>67</b>
<b>Support and Contact .....</b>	<b>71</b>
Authorized Resellers.....	71
<b>End user license agreement 2.1 (EULA).....</b>	<b>72</b>

## About O&O Defrag 12

Thank you for choosing O&O Defrag! O&O Defrag activates the hidden performance of your computer and packs file fragments efficiently and securely together. Everything from a fully automated defragmentation to a professional set up is included in O&O Defrag. Everything a good defragmentation software should be able to do.

Fragmentation slows down your computer drastically. The operating system distributed files all over the hard disk when saving data - this in turn slows down the accessing time. O&O Defrag helps you in this case! Defragmentation packs fragmented files together on the hard disk. This is the only way to restore the original performance of your computer.

O&O Defrag 12 goes one step further. All your system's files will be sorted according to their level of use, and each one will be separated into its own section of the hard disk. This [Zone filing](#) optimizes your system so that all your files are placed at their best possible storage location. O&O Defrag 12 introduces 3 new defragmentation methods that can also apply a user-defined classification of files to perfectly complement all previous methods. This leads to a faster system, which you can feel immediately. Program start up faster and it prevents a build up of file fragments. In addition, successive defragmentations will run faster then before.

The [Screen saver mode](#) is also very helpful. O&O Defrag optimizes your system whenever the screen saver is activated - whenever you are not using your computer.

We hope that you're satisfied with our new O&O Defrag and that it will keep your computer working at its best, just as it has helped millions of other users worldwide!

Your O&O Software Team  
<http://www.oo-software.com>

### More:

[Overview of new and known functions](#)

[Your First Steps with O&O Defrag](#)

[The Various Defragmentation Methods](#)

[Automatic Defragmentation with the Integrated Scheduling](#)

[How to detect the condition of your computer based on the status reports](#)

[O&O Defrag User Interface](#)

## Overview of new and known functions

Besides the continuous maintenance and enhancement of the existing program components, you will find several additional new and helpful features in O&O Defrag 12.

### **NEW:** [Drive zones and zone filing](#)

The filing into zones divides the data logically. A special algorithm makes sure that the data on the disk is optimally organized after the defragmentation. Files are organized and moved into zones depending on their intended use and the access frequency. For example, system files which have to be accessed quickly are separated from other data, like user data.

Free space is located between the zones so that new files can be moved directly into the correct zone. This logical grouping shortens follow up fragmentation; new fragmentation is permanently reduced and prevented.

### **NEW:** [Three enhanced methods](#) for defragmentation

These three new methods, Optimize, Optimize/Quick and Optimize/Complete will facilitate the selection of the defragmentation according to your needs. The new methods will group your data into drive zones and combine them optimally with previous techniques. Of course, the older methods are still available whenever you disable zone filing.

### **New:** Additional strategies to reduce fragmentation

Very large files with high-levels of fragmentation can also be efficiently packed together into a few fragments. The result is clearly measurable.

### **NEW:** Enhanced Background Monitoring

Very large files with high-levels of fragmentation can also be efficiently packed together into a few fragments.

### **NEW:** Enhanced [O&O OneClickDefrag](#)

The Wizard for optimizing your system performance. With the click of a button, you can automate defragmentation so that you don't have to kick off the defragmentation manually anymore. The adaptation is possible for computer type and for the intended use. You can also configure the background monitor and select all or individual drives. In addition, an immediate defragmentation of your entire computer or selected drives is possible with a few clicks.

### **NEW:** Compatible with Windows 7

O&O is always up to date with the newest technology. O&O Defrag 12 was also developed and tested for Windows 7 so that you reach optimal results with it. For this, the new file system exFAT is also supported, which was designed specifically to work with flash drives by Microsoft.

### **Further properties**

- File Status provides an overview of the largest and most heavily fragmented files on your drive.
- Integration in the Windows Explorer. Defragmentation of individual files and folders over by right-clicking.



- User Interface with a clear and concise Ribbon Bar
- Checks for new program versions
- Enhanced functionality of Tray-Icons. Control O&O Defrag from the task bar.
- Three new (eight in total) defragmentation methods for an optimal increase in speed
- Unique O&O ActivityGuard for monitoring the system load and adjusting the resource usage of O&O Defrag
- Enhanced block view for detailed information on the distribution of files in the drives.
- O&O ScreenSaver
- Power management for Notebooks
- O&O ClusterInspector for targeted inspection of hard disk regions.
- Wizard for the automatic and periodic defragmentation with integrated heuristic evaluation for optimal planning
- Status reports in HTML format to keep track of developments in performance.
- Support of removable drives (USB Sticks, Memory Cards, etc.)
- Execution of Windows commands (Batches) before and after defragmentation
- Screen saver mode automates defragmentation whenever the computer is idle

**More:**

[Other Features of the Server and Workstation Edition](#)

[Three different Editions: Professional, Workstation and Server](#)

## Three different Editions: Professional, Workstation and Server

O&O Defrag 12 is available in three versions:

- O&O Defrag 12 Professional Edition
- O&O Defrag 12 Workstation Edition and
- O&O Defrag 12 Server Edition

The Professional Edition is the version to use for defragmenting a single PC. It cannot be used on a server system and contains no network management console but it can be used as client for the Server Edition.

The Workstation Edition contains a network agent for controlling O&O Defrag in conjunction with the O&O Enterprise Management Console. The Workstation Edition can only be used on workstations.

The Server Edition a network agent for controlling O&O Defrag in conjunction with the O&O Enterprise Management Console. It can be used on both servers and workstations, the latter making more sense when the administrator wishes to control and monitor the defragmentation process from his computer.

## Other Features of the Server and Workstation Edition

The Server Edition offers the possibility to access other computers in the network and to control O&O Defrag remotely. Additional information is available in chapter "Work within the network".

In addition, you can run the following network functions using the Workstation and Server Edition in combination with the O&O Enterprise Management Console:

- Easy defragmentation of the entire company network
- Management of your computers in sites
- Definition of group settings for PCs

- Creation of a time table for automatic defragmentation with just a few clicks (Defrag Jobs)
- Automatic remote installation of O&O Defrag on network computers
- Integration into Active Directory and group policies for network distribution and configuration of software
- Execution of Windows commands (batches) before and after defragmentation

The O&O Enterprise Management Console is delivered on a separate CD – the O&O Network Components CD. It is part of your software delivery when you have acquired licenses in the O&O EasyLicensing volume license program. . If you have not received a CD, or are not in possession of a volume license contract, please contact us. We will send you the CD and provide consultation on application of the O&O Enterprise Management Console within your company.

E-Mail: [sales@oo-software.com](mailto:sales@oo-software.com)

## System Requirements

- The system requirement of each operating system have to be fulfilled
- 50 MB free hard disk space for installation
- **Professional Edition:** Windows™ 2000 Pro, XP, Vista® and Windows 7 (from Windows XP each 32-bit/64-bit)
- **Workstation Edition:** Windows™ 2000 Pro, XP, Vista® and Windows 7 (from Windows XP each 32-bit/64-bit)
- **Server Edition:** Windows™ 2000, 2003, XP, Vista®, 2008, Windows 7 (from Windows™ XP/Server 2003 32-bit/64-bit)

If you wish to use the network functionality, you must also have the following available:

- Network card and connection

**Note:** O&O Defrag can also be used from Windows XP/Server 2003 on the 64-bit systems. That's why we created a special 64-bit version, which can be found on the O&O Product CD or downloaded from our website.

### Operating Systems Supported

Operating System	Professional Edition	Workstation Edition	Server Edition
Windows 7	yes	yes	yes
Windows Server 2008	no	no	yes*
Windows Vista	yes	yes	yes
Windows XP	yes	yes	yes
Windows Server 2003	no	no	yes*
Windows 2000 Professional	ja	ja	ja
Windows 2000 Server	no	no	yes*
Windows Server 2008 R2	no	no	yes*

\* All variants of this server operating system are supported, except Core-Installations

### Access Permissions

To install O&O Defrag, you require local administration permissions. This is likely to be the case if you've been able to install other applications.

During the installation, you can also unlock O&O Defrag for ordinary users so that they will also be able to later access O&O Defrag. Otherwise, only the local administrator(s) will have access.

In a network, you must be the domain administrator if you wish to install and control O&O Defrag locally as well as on the network computers.

### **Microsoft Windows Installer**

The installation takes place with the help of the Microsoft Windows Installer. This is a component already integrated into Windows which simplifies the installation process.

If you are using Windows 2000 to SP3, the version of the installed Windows Installer will be checked before the actual installment of O&O Defrag. If there is no program on your system or only an older one, O&O Defrag Setup will install a suitable version.

# Installation

Installing O&O Defrag is very easy. Please follow the steps below:

1. Start the computer on which you would like to install O&O Defrag.
2. Sign in as an administrator or equivalent.
3. Start the O&O Defrag installation file that you downloaded from our web server or that is found on your CD-ROM.
4. Once you have successfully initialized the Setup Program, follow the instructions in the pop-up window to install Defrag.
5. Also, you can decide if you want to grant access to O&O Defrag the current or all users.

**More:**

[Note about Licensing](#)

[Enter license](#)

[Uninstall](#)

## Note about Licensing

O&O Defrag needs to be licensed per computer; in other words, you have to purchase a license for each computer where you want to employ O&O Defrag. You are not allowed to transfer this license on another computer.

If you would like to implement O&O Defrag in your company or as a technician for your customers, then please contact one of our resellers or our Sales Department.

### Trial version

If you do not enter a valid license key, you can still use O&O Defrag as a fully functional trial version for a limited time. Should you have any questions, please contact our Support Team.

## Entering the license

Note: In order to activate the product after installation or to gain access to the Full Version at a later time, you must possess a valid license key. This license key is also called a registration code, serial number, or product ID.

The dialogue for registration always appears automatically at the start to guide you if you are using an unregistered version or have entered the registration code incorrectly.

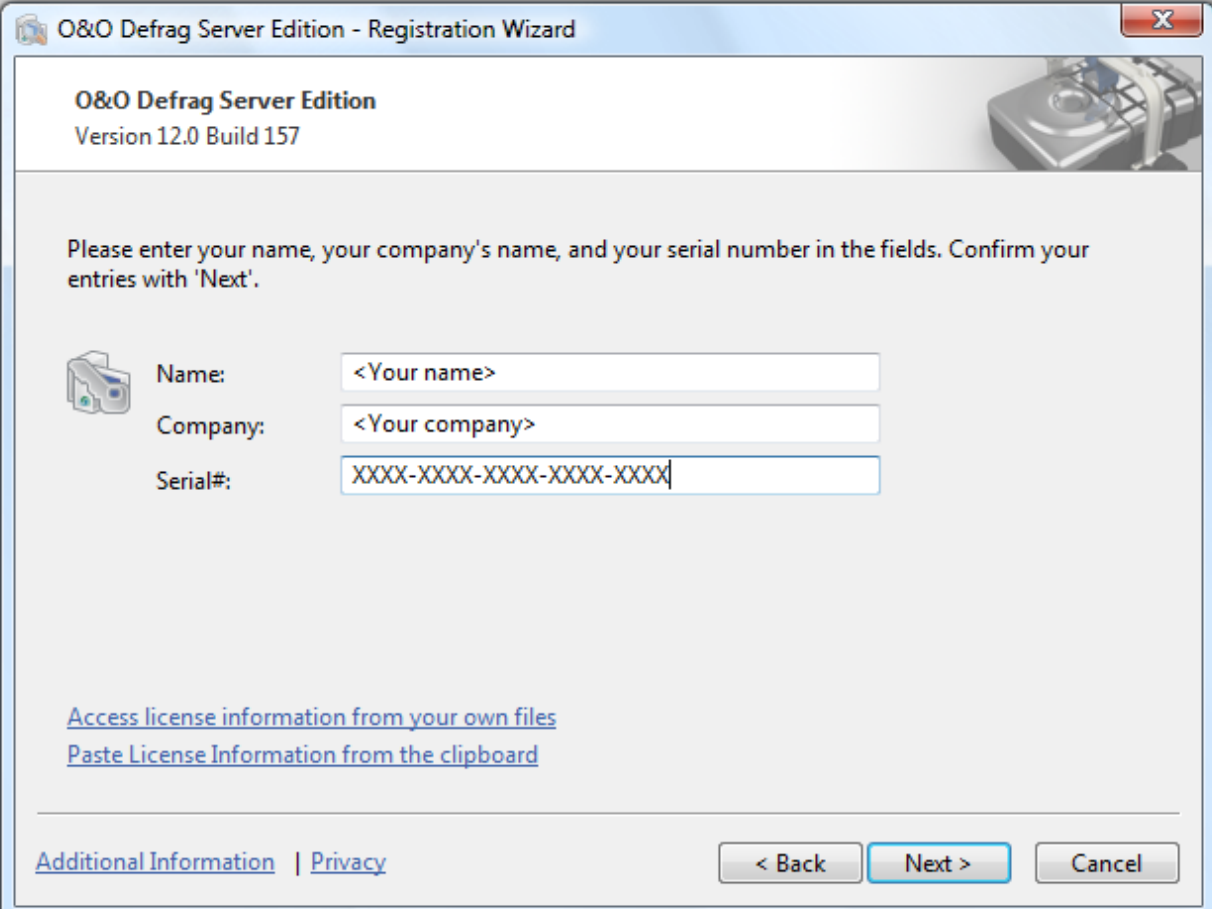
The registration wizard allows for a simple registration process. When you select the option **Enter your Registration Code**, a dialog box will appear where you can enter the registration code you received when purchasing the software. Please make sure that you do not confuse the digit "1" with "l" or enter any empty spaces where they don't belong.

Press **Next** to save the registration data or **Cancel** to leave the dialogue without saving the data.

When you have correctly entered the license code you will receive confirmation in the dialog window.

Should you run into any problems when entering your registration code, please contact our Support Team.

**Note:** If you do not enter a valid license key, you can still use O&O Defrag as a fully functional trial version for a limited time. Should you have any questions, please contact our Support Team.



O&O Defrag Server Edition  
Version 12.0 Build 157

Please enter your name, your company's name, and your serial number in the fields. Confirm your entries with 'Next'.

Name: <Your name>  
Company: <Your company>  
Serial#: XXXX-XXXX-XXXX-XXXX-XXXX

[Access license information from your own files](#)  
[Paste License Information from the clipboard](#)

[Additional Information](#) | [Privacy](#)

< Back   Next >   Cancel

Registration Wizard: Enter the License Key

## Using the test version

You can test a fully functional trial version of O&O Defrag free of charge and with no obligation for a period of 30 days. Each time you start the program, the registration wizard will appear informing you of the remaining trial period. Should you have any questions, please contact our Support Team.

## Uninstall

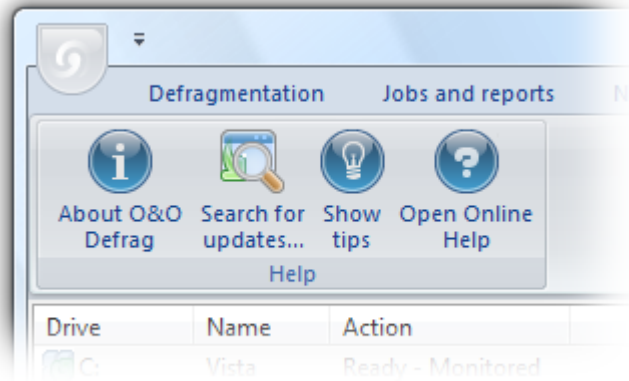
To uninstall O&O Defrag, please follow these steps:

1. Open the **Control Panel** from the **Start menu**.
2. Click **Add/Remove programs**

3. Select **O&O Defrag Professional Edition** or **O&O Defrag Server Edition** in the list of programs.
4. Click **Remove**.
5. The O&O Defrag uninstallation program will be started.
6. Confirm then the uninstallation of O&O Defrag. Once the uninstallation is complete, you may have to restart your computer.

## Installing Updates of O&O Defrag

You can check whether new updates for O&O Defrag are available in the Help Menu.



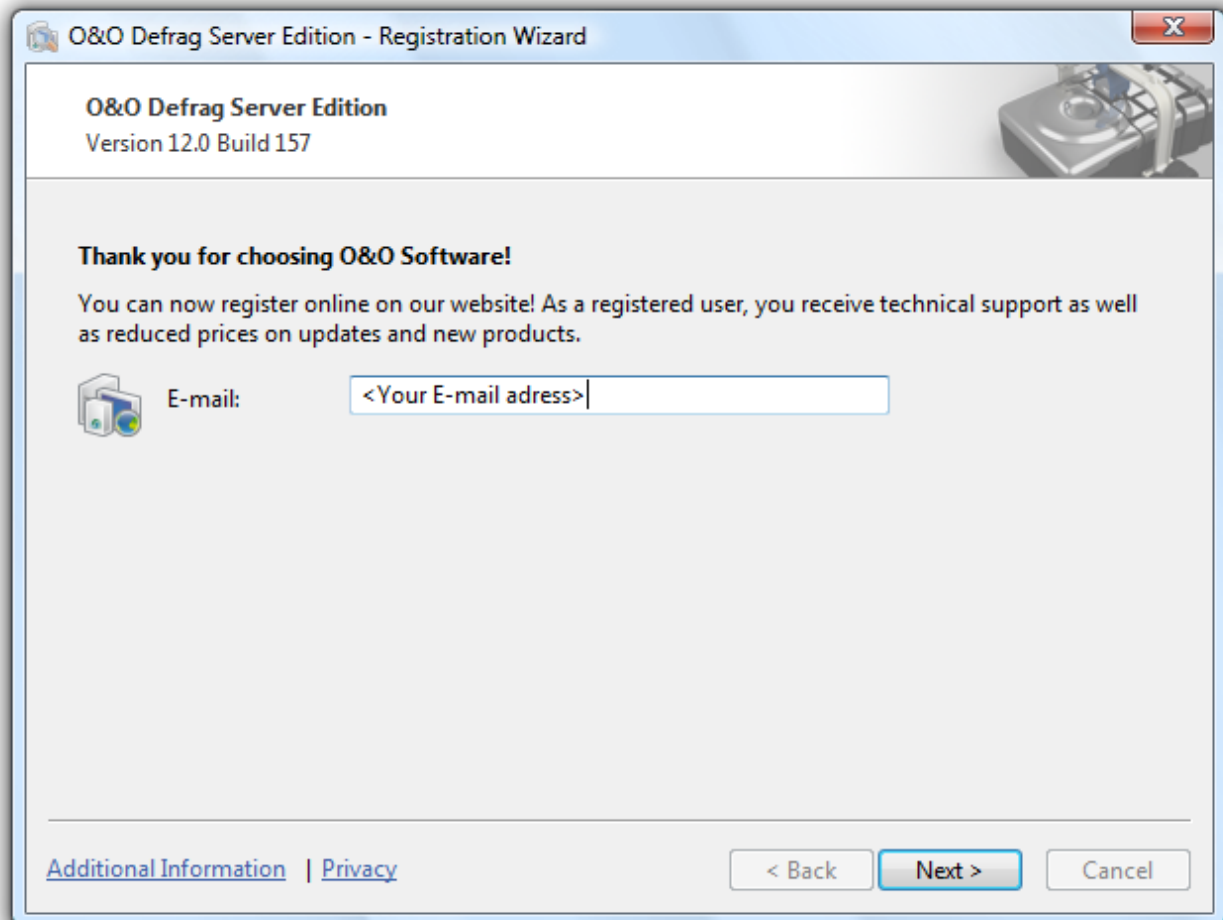
Help Menu

When updating from a previous version of O&O Defrag, please follow the steps listed below:

1. Uninstall all the previous version of O&O Defrag and keep your registration data handy.
2. Start the update installation for O&O Defrag.
3. Simply follow the normal installation instructions. Once finished, the new version is fully installed.

## Online-Registration

In order to register an O&O product online, you will need the license key, which you have received when you purchased the program. This license key is also called a registration code, serial number, or product ID.



### Online Registration

#### More:

[What are the advantages of online registration at O&O?](#)

[How does online registration work?](#)

#### What are the advantages of online registration at O&O?

Online registration gives you the benefit of having your customer data kept safely on our files, which means we can provide you with even better service. This comes in very handy if, for example, you're unable to find the license key for your product. The license key is needed for making Updates or reinstalling the O&O programs on your computer if it ever needs to be set-up again.

Further advantages will let you:



- Be supplied with the latest information about our products
- Make free updates on new versions of purchased items (minor updates)
- Upgrade to a new version at a special discount price (major update)
- Obtain support from our Customer Service
- And much, much more...

### **How does online registration work?**

If your O&O program was purchased on our Online Shop, you've automatically registered with us. If you've started the O&O program from CD, you will be asked to register online after the installation is complete. You then have the option of either registering immediately or at another time. All you'll need is a functioning Internet connection and a valid license key.

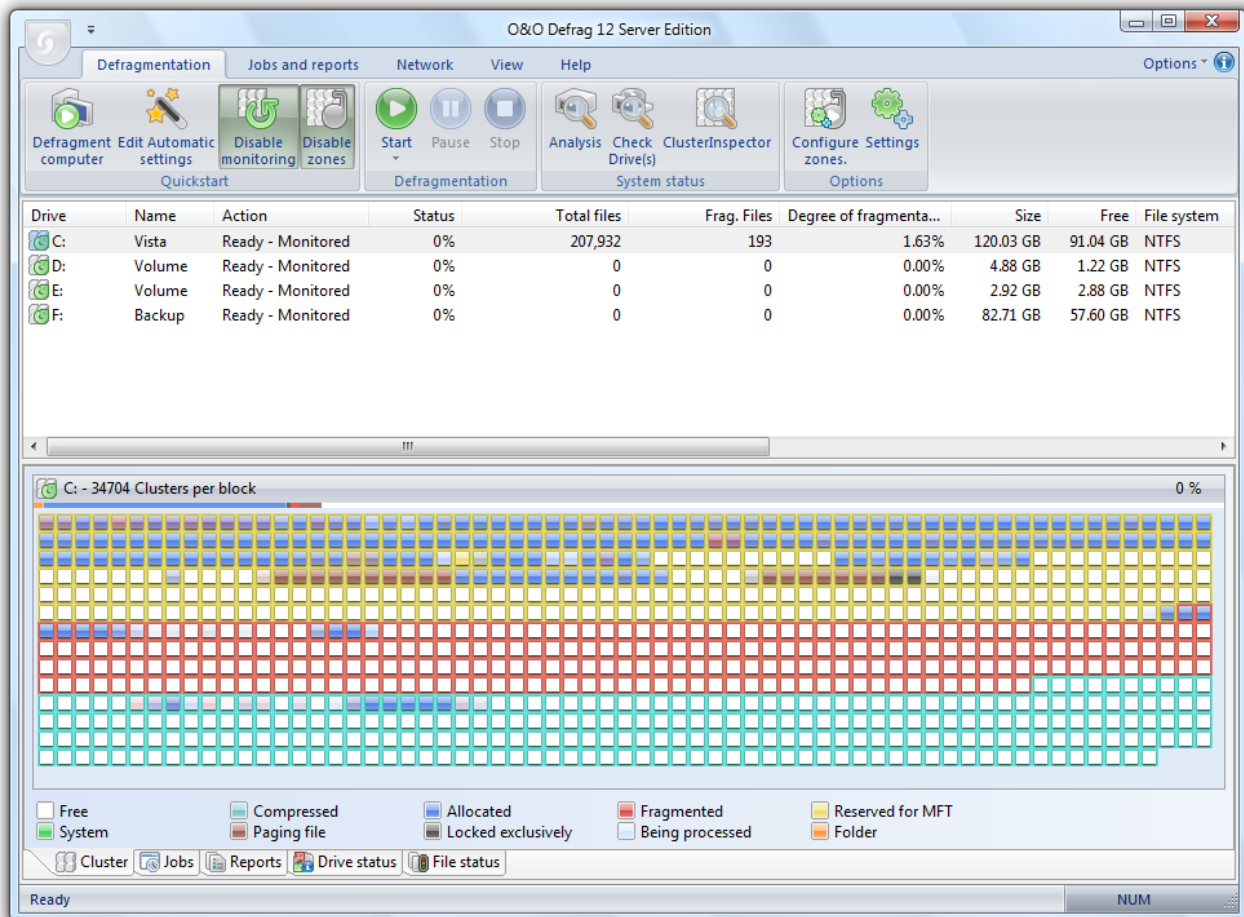
You may also complete the registration form right here:

<http://www.oo-software.com/register>

Just return the completed online form by clicking "Send" and you'll be eligible to take full advantage of our O&O Customer Service.

# Getting started

The following chapters will explain how you can use O&O Defrag after it has been successfully installed. To do this, start O&O Defrag from a shortcut on your desktop or under **Start/All Programs/O&O Software/O&O Defrag**. You can also have online help displayed by clicking **Help** or pushing **F1**.



O&O Defrag Start page

**More:**

[O&O OneClickDefrag](#)

[Analyzing your Drives](#)

[Defragmenting your Drives](#)

[Select profile](#)

## O&O OneClickDefrag

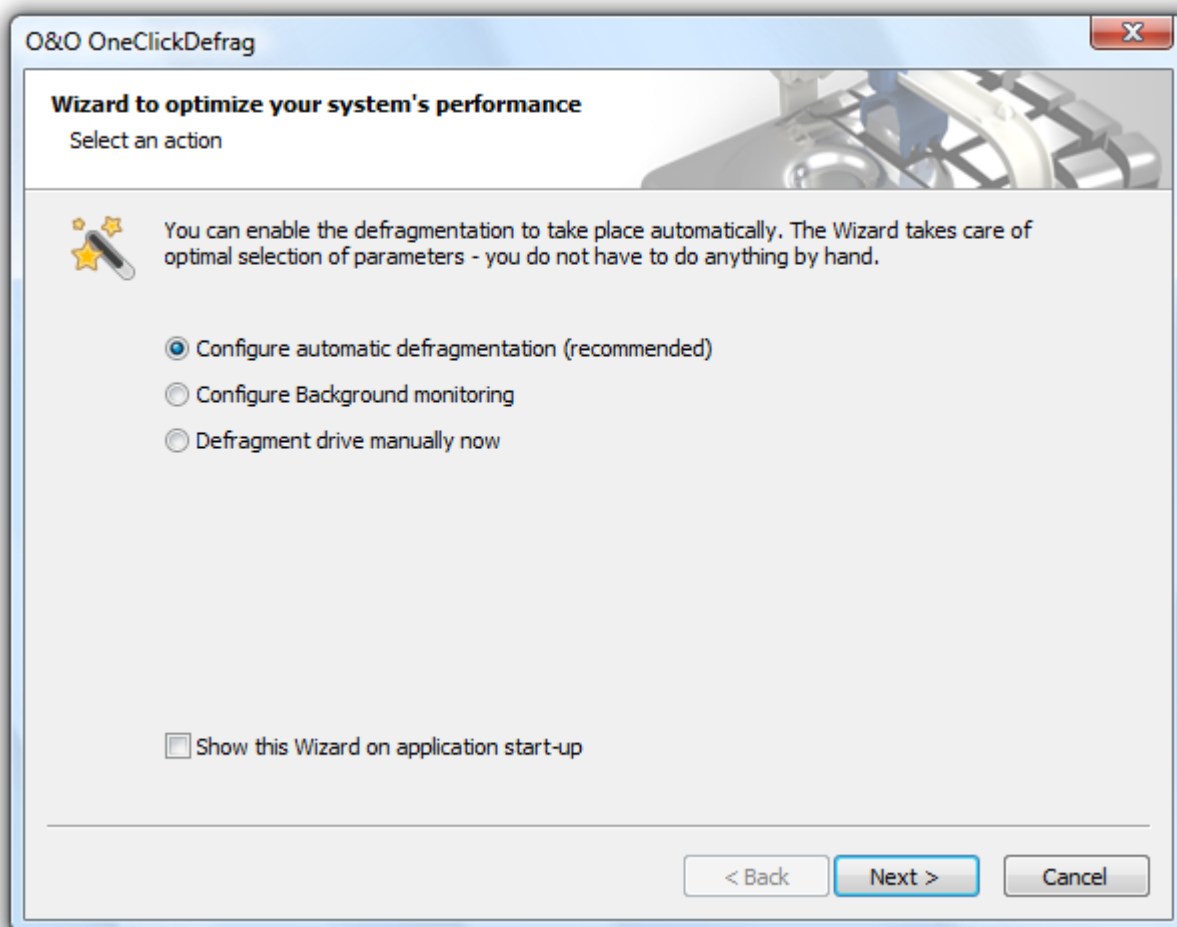
Using O&O OneClickDefrag it is possible to automate the defragmentation of your computer with just a few mouse clicks. Once its setup, you will never have to worry about the optimization of your hard disks again. Everything will be taken care of in the background by O&O Defrag.

- You can start the Wizard by clicking **Edit automatic settings** in the ribbon bar of the **Defragmentation** tab.

### Set up automatic defragmentation

1. Select **Edit Automatic settings** then click **Next**.
2. Select computer type and scope of use by following the dialogue windows.
3. After the wizard has been completed, the defragmentation of your computer is now automated.
4. You can now close O&O Defrag. Defragmentation will now be carried out automatically in the background and adapted to the level of fragmentation on your computer.

You can disable this function at any time. Under **Defragmentation** in the ribbon bar click **Change Automatic settings** and then **Disable automatic settings**.



O&O-OneClickDefrag-Assistent

## Configure background monitoring

Background monitoring will evaluate all newly arrived and modified files. Newly fragmented files will be automatically defragmented once they are no longer being accessed. This will ensure that your system is being constantly kept at its highest level of performance, and effectively prevent any additional fragmentation.

You can set the background monitoring for either your entire computer (default) or selected partitions only. The various zones of a drive will also be taken into consideration, when this option is enabled.

- Background monitoring can be customized in the O&O OneClickDefrag wizard under **Edit Automatic settings/Configure Background monitoring**.

## Defragment drives manually now

If you're looking to immediately defragment individual drives or all hard disks, click **Edit Automatic settings/Defragment drive manually now**. Once you've done this, you'll be able to select individual drives. Clicking **Finish** will let you begin defragmentation.

## Analyzing your Drives

Analyzing your hard disks gives you an overview of how files are organized and how heavily fragmented they are. O&O Defrag creates a detailed status report about the fragmentation level once the analysis has been completed.

This level will be somewhere between 0 and 100 – the lower the number (zero is the ideal), the less fragmented your hard disk. A value near 100 is the worst case – your files are almost completely fragmented. Even values of around 30 mean that the performance of your system is seriously suffering from the level of fragmentation, and that a defragmentation run is strongly recommended.

Level	Explanation and action needed
< 5%	Almost all files are optimally organized on the hard disk. This is the ideal condition and can only be achieved and maintained through regular defragmentation.
5% – 15%	This level is reasonable, and means that your hard disks are in good condition.
16% – 40%	Your system is working slower than normal because of heavy fragmentation. Defragment regularly and use the time planning feature included in O&O Defrag. This will keep your system running at a good speed.
From 40%	Your system is very heavily fragmented and is suffering from very serious performance loss. You should defragment your system right away and create jobs for periodic defragmentation. Compare the fragmentation levels before and after the defragmentation run.

**More:**

## [Starting an Analysis](#)

### Starting an Analysis

1. Select the drive to be analyzed from the drive list.
2. Start the **Analysis** via the Ribbon Bar under the tab **Defragmentation** or by right-clicking.
3. The analysis can take a few moments, depending on the size of the drive. You can follow the progress of the analysis on the drive symbol and the progress display.
4. When the analysis is complete, you can view the detailed status report as a HTML document in your web browser.

**Note:** You can analyze several drives simultaneously. Mark the various volumes by keeping the Ctrl key depressed while selecting.

## Defragmenting Your Drives

O&O Defrag allows you to defrag single drives or entire computers with just a few mouse clicks.

### More:

[Defragment Single Drives](#)

[Defragment an Entire Computer](#)

[Defragmenting individual files and folders](#)

### Defragment Single Drives

1. Select the drive you wish to defragment from the drive list.
2. Start the defragmentation by clicking **Start** in the Ribbon Bar (Defragmentation Tab), or choose the desired defragmentation method by right-clicking above the selected drive.
3. Afterwards, select the [method](#).
4. Depending on the size of your drive, the defragmentation can take up to a few hours. You can follow the defragmentation process via the drive symbol and the progress display.
5. Once the defragmentation is finished, you can have the detailed status report displayed as an HTML document in your web browser.

**Note:** You can defragment several drives simultaneously. Mark the various volumes by keeping the Ctrl key depressed while selecting.

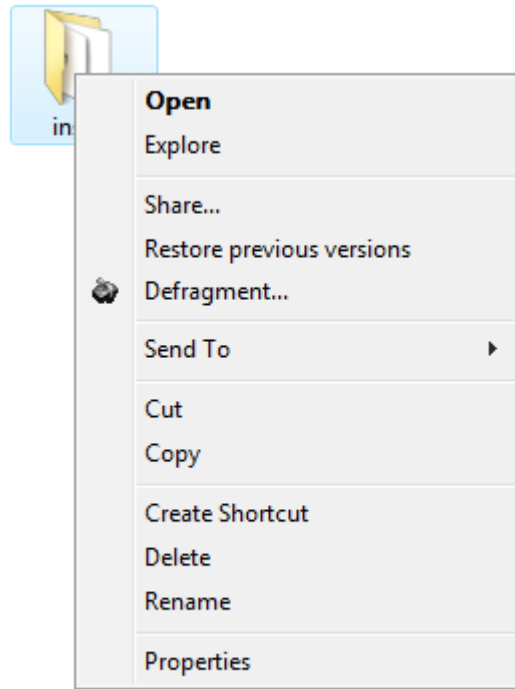
### Defragment an Entire Computer

To defragment your whole computer, click on the Ribbon Bar in the **Defragmentation** tab on **Defragment computer**.

Depending on the size of your drive, the defragmentation can take up to a few hours. You can follow the defragmentation process via the drive symbol and the progress display.

## Defragmenting individual files and folders

You can also defragment individual folders or files. Just right-click any file or folder on your computer and click **Defragment**. O&O Defrag will be opened and the defragmentation begins. Defragmentation of smaller amounts of data is often completed within just a few seconds.



Defragment folder by right-clicking

## Recommendations for Your First Defragmentation

As a rule, the first defragmentation will take the longest, as O&O Defrag has to perform a complete check on your system and perhaps move fragmented files into an optimum position. Especially with systems that have been in use for a long time and have seldom or never been defragmented, this can take a long time.

## Selection of the defragmentation method

O&O Defrag 12 introduces three completely new defragmentation methods in addition to the previous five. The choice of the method appears, after you have pressed the Start button for the defragmentation.

### OPTIMIZE

Standard method of O&O Defrag. It executes a SPACE defragmentation in all three zones of the selected drive. The files will be so arranged in order to maximize the resulting free disk space. This is the recommended method, because it is working in detail as well as quick.

### OPTIMIZE/Quick

Quick defragmentation with a shorter run time and doesn't use much space. It defragments in all drive zones of fragmented files. It also moves files which are not located in the correct zone to the right one. This method is new in that it aggressively reduces fragmentation of extremely fragmented files, without having to analyze the entire file system.

### OPTIMIZE/Complete

Replaces or summarizes the existing COMPLETE methods. The user decides which method should be run on each zone (SPACE or COMPLETE-sorting). It is much more thorough due to the new sorting of the data, but also much slower than the standard Optimize method. It is only necessary if the files are supposed to be completely reorganized on the hard disk.

Standard allocation (can be modified by the user under zone filing):

- Zone 1 (operating system and installed programs) - COMPLETE/Name
- Zone 2 (user data and settings) - COMPLETE/Access
- Zone 3 (seldom used and large files) - SPACE

### Overview

The following tables give an overview of using the right methods for each intended use. You will receive optimal results if you consider the suitability of each method for each intended use. No mark (empty field) means that another method might be better suited for getting optimal results.

Recommendation for:	OPTIMIZE	OPTIMIZE/Quick	OPTIMIZE/Complete
First use	+		++
Occasional repeated application	+++	+	+
Often repeated application	+	++	
After the installation of a larger program	+++		+
After the installation of a game	+++		+
After the installation of a comprehensive Update (e.g. Service Pack)	+		+
After the installation of a program or a game	+++		
Defragmentation of system drives	+++	+	++
Defragmentation of data drives	+++	++	
Very large files, seldom changed	+	++	

100.000 files	++		++
500.000 files	++	+	+
1 M files	+	++	
From 5 M files		++	

**Caption:**

- ++ Very well suited  
+ Well suited

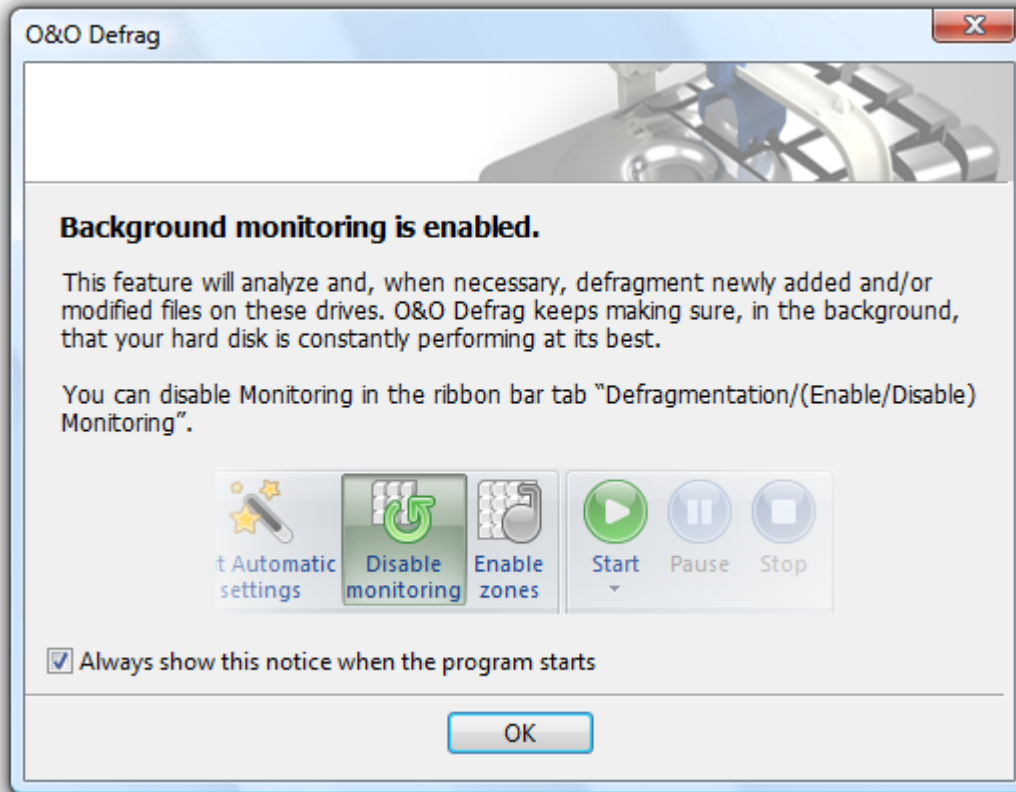
**Note:** If you have explicitly disabled zone filing, you will only have the methods of the previous versions available. The explanation can be read in the chapter on [Usual methods of O&O Defrag](#).

## Background monitoring

The background monitoring function in O&O Defrag is unique and takes away the necessity of having to set up the defragmentation manually. It is activated automatically after its installation and optimizes your hard disk in the background; without your computer losing any of its performance level. This innovative function makes it possible for administrators under pressure, as well as for non professionals, to maintain the highest performance levels without loosing time getting to know the program.

**Note:** The background monitor will only start-up on your hard disk, not on external storage volumes. This helps avoid inconsistencies and data loss, which can occur if the storage volume is removed accidentally from your computer during an active background fragmentation.





### Background Monitoring

All write accesses and newly added files are monitored. Newly fragmented files are automatically defragmented as soon as they are no longer being accessed by the user. This basically ensures your system's full performance capacity while continually preventing new fragmentation. Furthermore, a defragmentation of all files will be performed at regular intervals which will minimize existing fragmentation and put little strain on available resources.

The normal and regular use of your computer could lead to particular files being accessed very often. These files can be your registry database, container files of download programs, or Temporary Internet Files. The frequency of changes made on them prompts the background monitor to initially avoid them, so as not to disturb the user with constant defragmentation. These files are then defragmented during the regular defragmentation session without the user having to guide the process.

- It is also possible to run the background monitor on only some partitions, read more in chapter [O&O OneClickDefrag](#).

#### Notes for the background monitor:

If your background monitor often defragments particularly large files, e.g., a container file of virtual computers, without your consent, and your system slows down because of it, we recommend excluding these files in the setup dialogue before defragmenting.

The background monitoring function does not work on external USB or FireWire drives. This has been restricted for reasons of data security. It is possible to lose data if a drive is removed without having been properly logged off. As a result of the background monitor running constantly without any noticeable negative effects, it is easy to overlook an external drive that is in the process of being defragmented.

The background defragmentation packs all fragmented files quickly and effectively together. It is, however, designed to use the least amount of resources so that the system is only minimally burdened and the user can continue working undisturbed. It is, therefore, not possible for the background defragmentation, as a result of restructuring, to recreate the operating system's prescribed optimal order of files on the hard disk. To guarantee optimal performance, we recommend that you also run a regular (for example, monthly) Optimize or a Optimize/complete method.

Please note that under Windows Vista, Windows 2003 Server, Windows Server 2008 and Windows 7, a complete restructuring defragmentation of drives backed-up through shadow copies might lead to the loss of older savesets. This is a problem known to Microsoft, and these drives are marked accordingly in the O&O Defrag user interface. We therefore recommend letting only O&O Defrag background monitoring function run on these drives.

## User Interface (GUI)

The main view of O&O Defrag consists of the following components:

**More:**

[Ribbon Bar](#)

[Drive List](#)

[Block View](#)

[Job View](#)

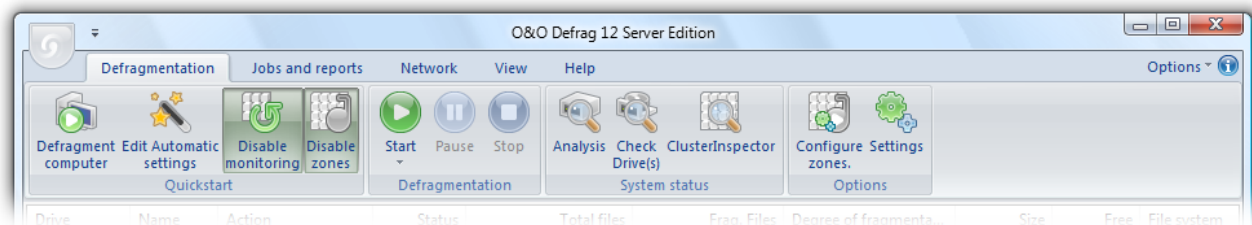
[Report View](#)

[Drive Status View](#)

[File Status View](#)

### Ribbon Bar

The Ribbon Bar displays all the actions that you'll be able to run using O&O Defrag. All settings and functions are at your disposal with just a few clicks of the mouse. All views of O&O Defrag also come with context menus that will offer you the commands that can be run on any given view.



Ribbon Bar

### Drive List

The drive list displays information about the drive and the task which is currently being carried out. You can configure the list columns yourself. Just right-click the drive and click **Change columns**.

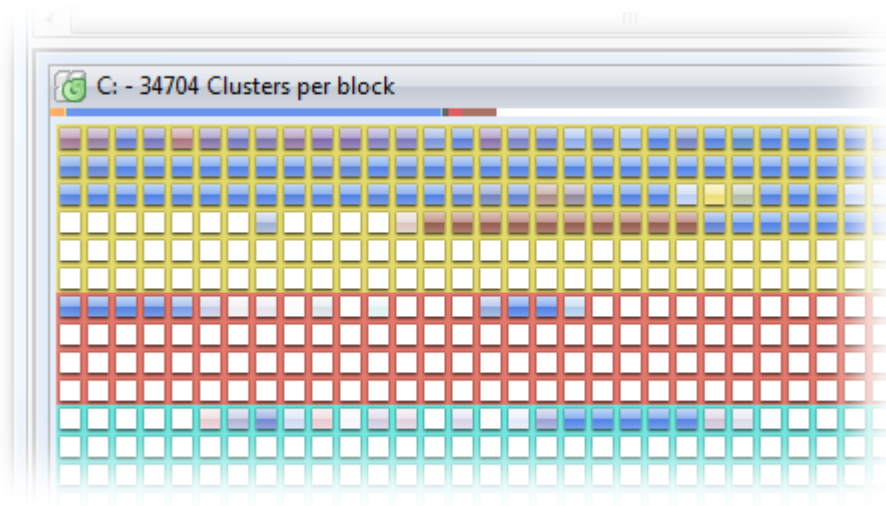
As a default option, the following information is displayed; drive letter, status, progress in percent ("% completed"), fragmented files, the size of the drive, free disk space, file system type, and the current file/folder being processed.

Quickstart				Defragmentation		System status		Options		
Drive	Name	Action	Status	Total files	Frag. Files	Degree of fragmenta...	Size	Free	File system	
C:	Vista	Ready - Monitored	0%	207,932	193	1.63%	120.03 GB	91.04 GB	NTFS	
D:	Volume	Ready - Monitored	0%	0	0	0.00%	4.88 GB	1.22 GB	NTFS	
E:	Volume	Ready - Monitored	0%	0	0	0.00%	2.92 GB	2.88 GB	NTFS	
F:	Backup	Ready - Monitored	0%	0	0	0.00%	82.71 GB	57.60 GB	NTFS	

Drive List

## Block View

The block view displays the allocation of the selected drives in the drive list by means of a block graphic. Please note that by selecting them simultaneously, you can view several drives in a split block view.



Block View

For viewing purposes, a certain number of drive clusters will be summarized in one block. This number is displayed at the top of the block view. You can change the size of the blocks and the way they appear on screen (**Classic Block View/Shaded Block View**) in the Ribbon Bar (in tab **View**) or by right-clicking. The Shaded View will display the actual used space of a block in a mixed color. If you choose not to use shading, the block will be displayed in prioritized full color. The varying conditions that can be prioritized with color are listed in the chart below.

Description	Explanation
In processing	O&O Defrag is currently working on one or more cluster in this block.
Exclusively locked	The block contains files that are exclusively locked by Windows or other applications (e.g. the registry).
Paging file	Block contains clusters from the paging file.
Fragmented	At least one cluster belongs to a fragmented file.
Directory	Block contains a cluster of one or more non-fragmented directories.

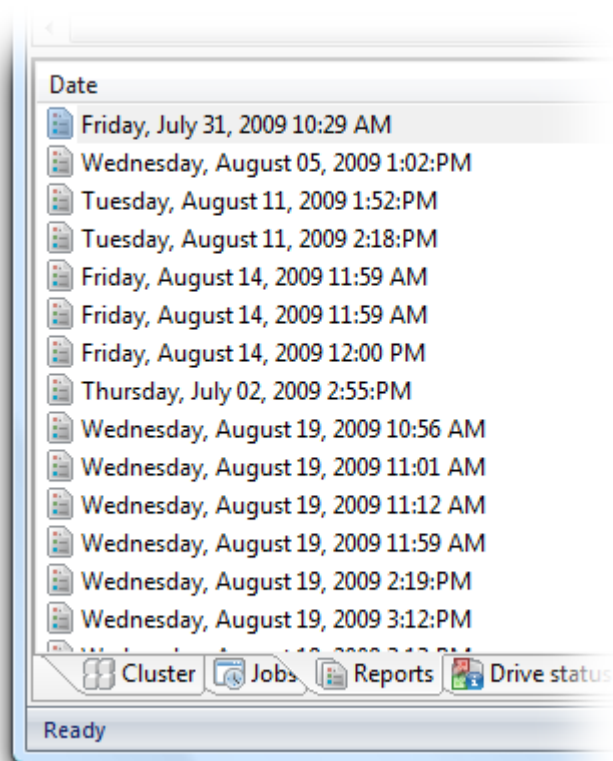
Description	Explanation
Compressed	At least one cluster is used by one not- fragmented and compressed file (only NTFS).
Occupied	At least one cluster is used by one not- fragmented file.
System	At least one cluster is used, it could not be assigned to a file.
Reserved for the MFT	At least one cluster is reserved for the MFT.
Free	All clusters are empty.

### Job View

In Jobs at the bottom of the screen, all defragmentation jobs available on the computer will be displayed. You can edit or remove these jobs by highlighting them and selecting the relevant function from the Menu. You can also access these functions by right-clicking.

### Reports

When you have chosen to have status reports created, these will be displayed in **Reports** at the bottom of the screen. You can open a report by double-clicking it and having it displayed in your Internet browser.



Report View

## Drive Status

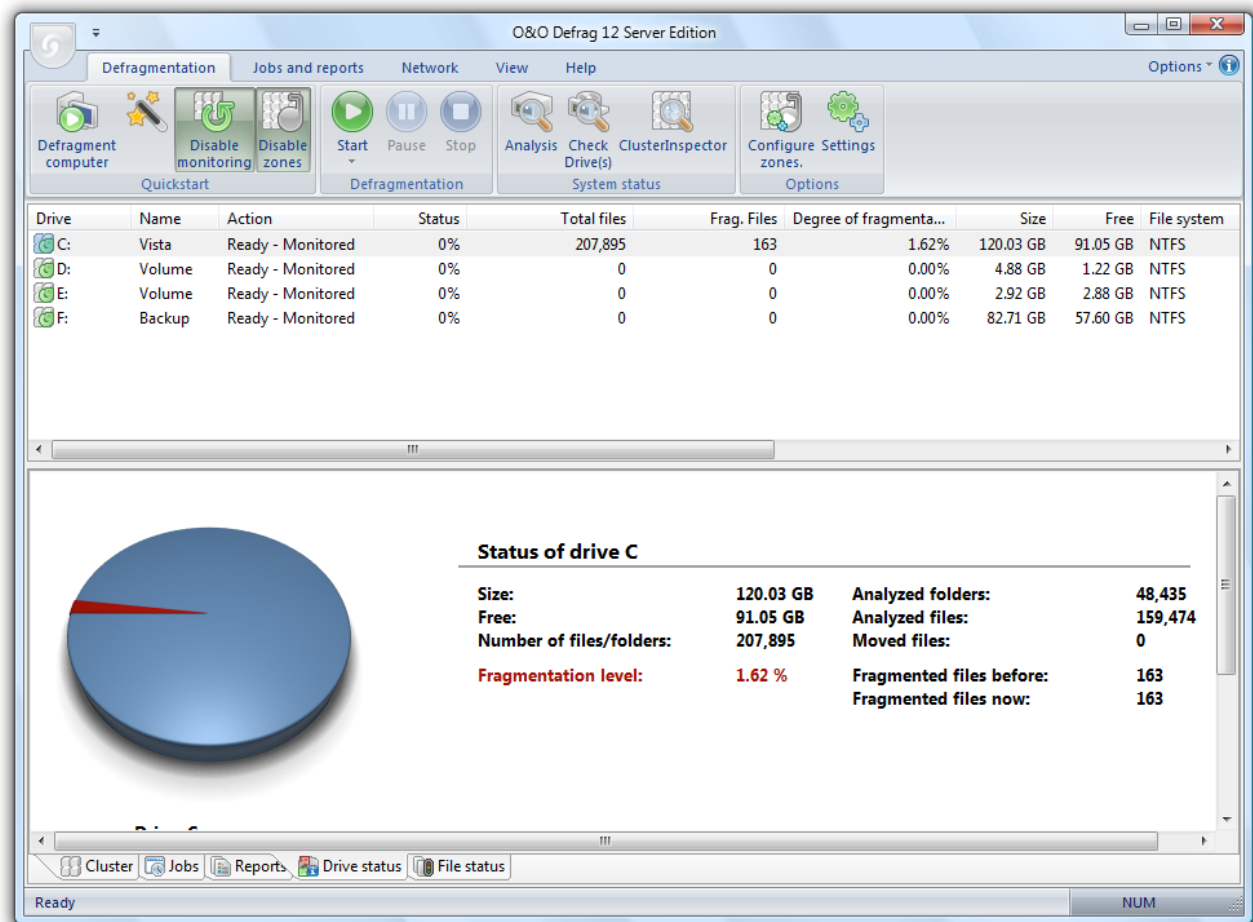
**Drive Status** at the bottom of the screen displays additional information on selected drives before and after the defragmentation.

## General

Divided into four sections, this tab supplies information about your drive, the drive allocation, and the file system. The refreshed pie chart will dynamically represent the proportional level of fragmentation during a defragmentation run.

## Status Report

The status report informs you about the file system and the number of files on your drive as well as about the dynamic, current status of the defragmentation. It contains the number of fragmented files before and after the defragmentation along with some additional information.



Drive status

## File status

**File Status** at the bottom of the screen provides an overview of the largest and most heavily fragmented files on your drive. The contents of this file system statistic can also be found in the status reports. You have to first analyze the file statistics of a drive in order to have them displayed here. This will occur after you click **Analysis** in the Ribbon Bar.

[illegible]

## File status

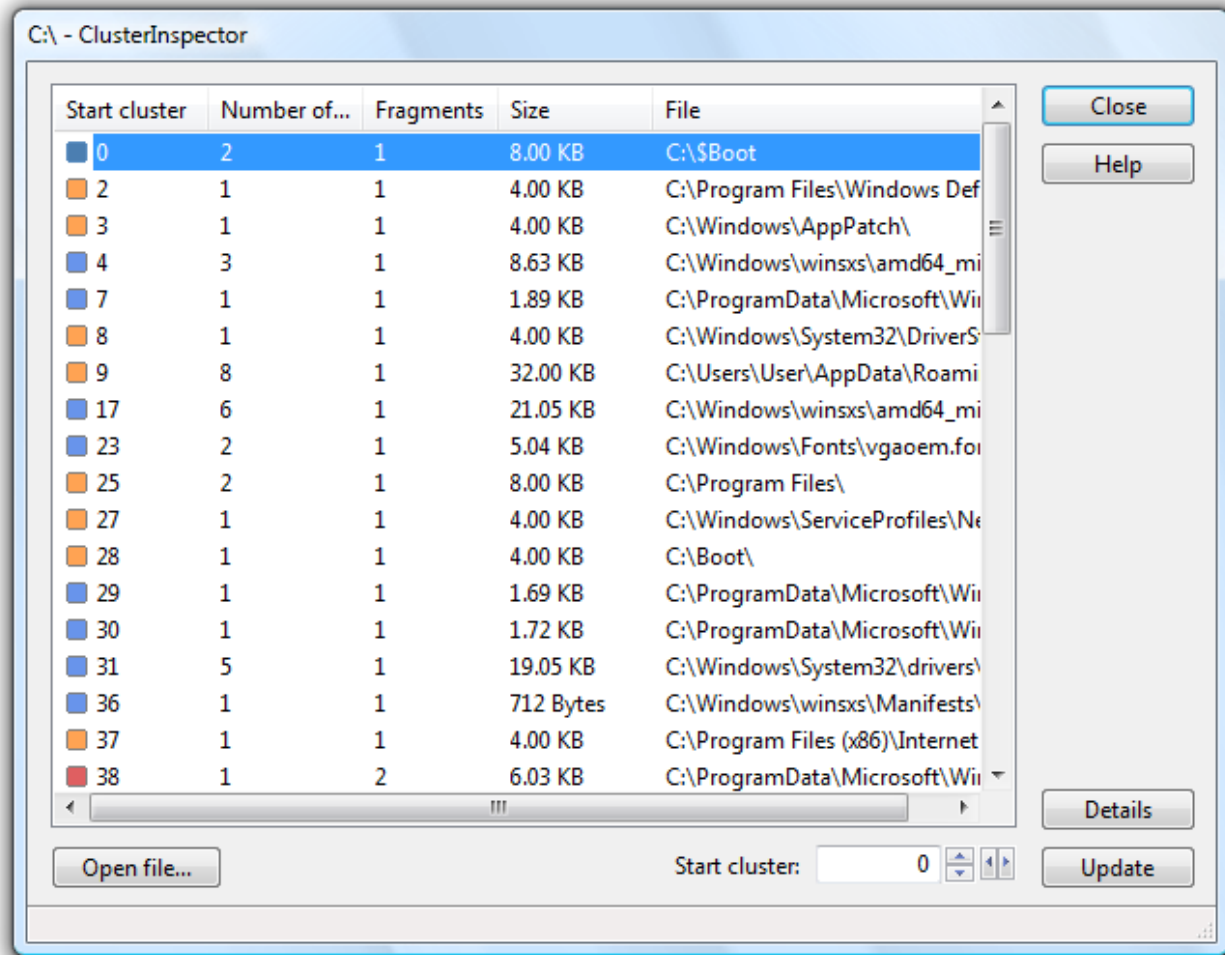
## O&O ClusterInspector

O&O Defrag's ClusterInspector offers you a convenient way of finding individual files within the Block View.

The ClusterInspector can be enabled by clicking on a block in the Block View. The dialogue displays the composition of the file in the checked hard disk area.

To choose another cluster or block, enter the Start Cluster number. The list will be immediately refreshed.





ClusterInspector

**More:**

[All about the file](#)

**View File Status**

The files status provides you with information, on how individual fragments of a file are distributed on a hard disk, and tells you all about the size and the fragmentation of the file.

1. Click on a cluster in the Block View.
2. The ClusterInspector will then be opened and gives you the option to receive more information under **Details**.
3. All the corresponding file fragments will be highlighted in the block view. You can see the number of file fragments the file is divided into and where the fragments are located on the hard disk. The size of the respective fragments will also be displayed.

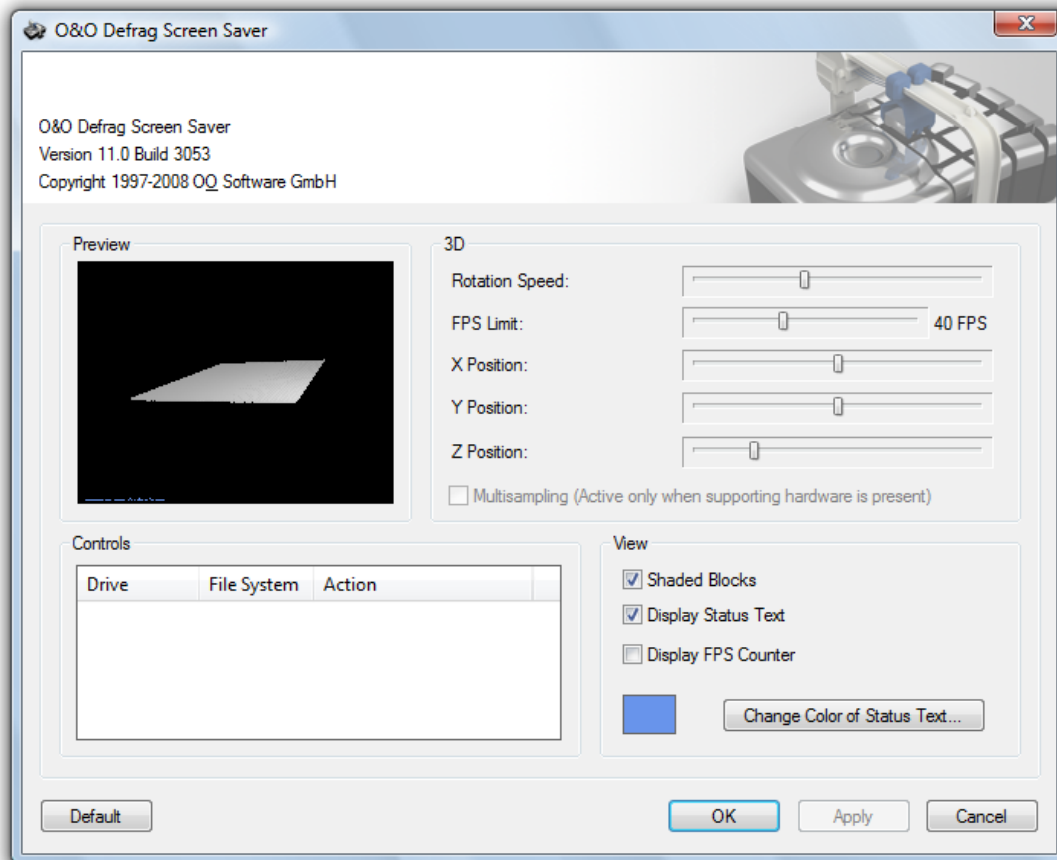
**O&O Defrag Screen Saver**

The O&O Defrag Screen Saver allows for the defragmentation of your partitions whenever you are not using your computer.

When activated, the drive being defragmented is displayed in detail on screen, giving you the ability to follow the defragmentation process "live", as it happens.

In addition, the status text generated by O&O Defrag is shown in the background.

As is the case with most screen savers, the operation of the O&O Defrag Screen Saver stops as soon when mouse or keyboard activity is detected.



O&O Defrag Screen Saver

To change the settings for the O&O Defrag Screen Saver, double-click on the **Display** icon in the Control Panel and then select the tab labeled **Screen Saver**. Select the O&O Defrag Screen Saver from the **Screen Saver** drop down menu.

By clicking the Settings button, you will be presented with a new window containing the settings for adjusting the O&O Defrag Screen Saver's operation.

### Rotation Speed

This slide bar regulates the rotation speed of the defragmentation display.

### FPS Limit

FPS stands for "Frames Per Second". This is the number of frames displayed on screen per second. A higher FPS limit increases the load on the system and improves the resolution of the image.

### X, Y, and Z Position

These slide bars can be used to control the horizontal and vertical positioning of the displayed drive. The "Z Position" slide bar controls the size of the image.

The "Z Position" slide bar controls the size of the image.

### **Quadruple Edge Smoothing**

When supported by your graphics card, this option enables a smoother graphical representation of corners.

### **Control**

In this section, it is possible to select the drives you wish to have defragmented, when the O&O Defrag Screen Saver is active. In the column entitled "Action", select the desired **method of defragmentation** for the corresponding drive.

Additional information concerning the different methods of defragmentation can be found in the O&O Defrag User's Handbook under "Methods".

### **View**

In this menu various parameters concerning the appearance of application can be changed.

# Settings

To adapt O&O Defrag optimally to your intended use, you can set different settings.

- Click **Settings** in the ribbon bar of the **Defragmentation** tab.
- To configure the division of the drive into zones or to disable click on **Zone filing**.

**More:**

[General](#)

[Offline-Defragmentation](#)

[Tuning](#)

[Zone filing](#)

## General

The settings will specify the way O&O Defrag performs during analysis and defragmentation.

### Reports and Logging

You can create status reports which you may be later examined as HTML documents. A maximum of 999 reports can be saved for one computer.

You can enable this option if you want to log all O&O Defrag actions simultaneously in the Windows result log. You'll be able to specify the level of detail you want recorded, whereby Level 1 records only errors as opposed to Level 4 which saves all information. Please note that Level 4 can include an enormous number of results which may end up using considerable disk space.

### Exclude Files

If you don't want to include certain files and/or directories in a defragmentation, you'll be able to specify them here. These files will be ignored in the defragmentation.

### Task Tray Control

If desired, an icon can be created in the task tray which displays the present defrag status.

By double-clicking, you can display the Status Monitor.

**By right-clicking you can control the defragmentation without** opening the user interface.

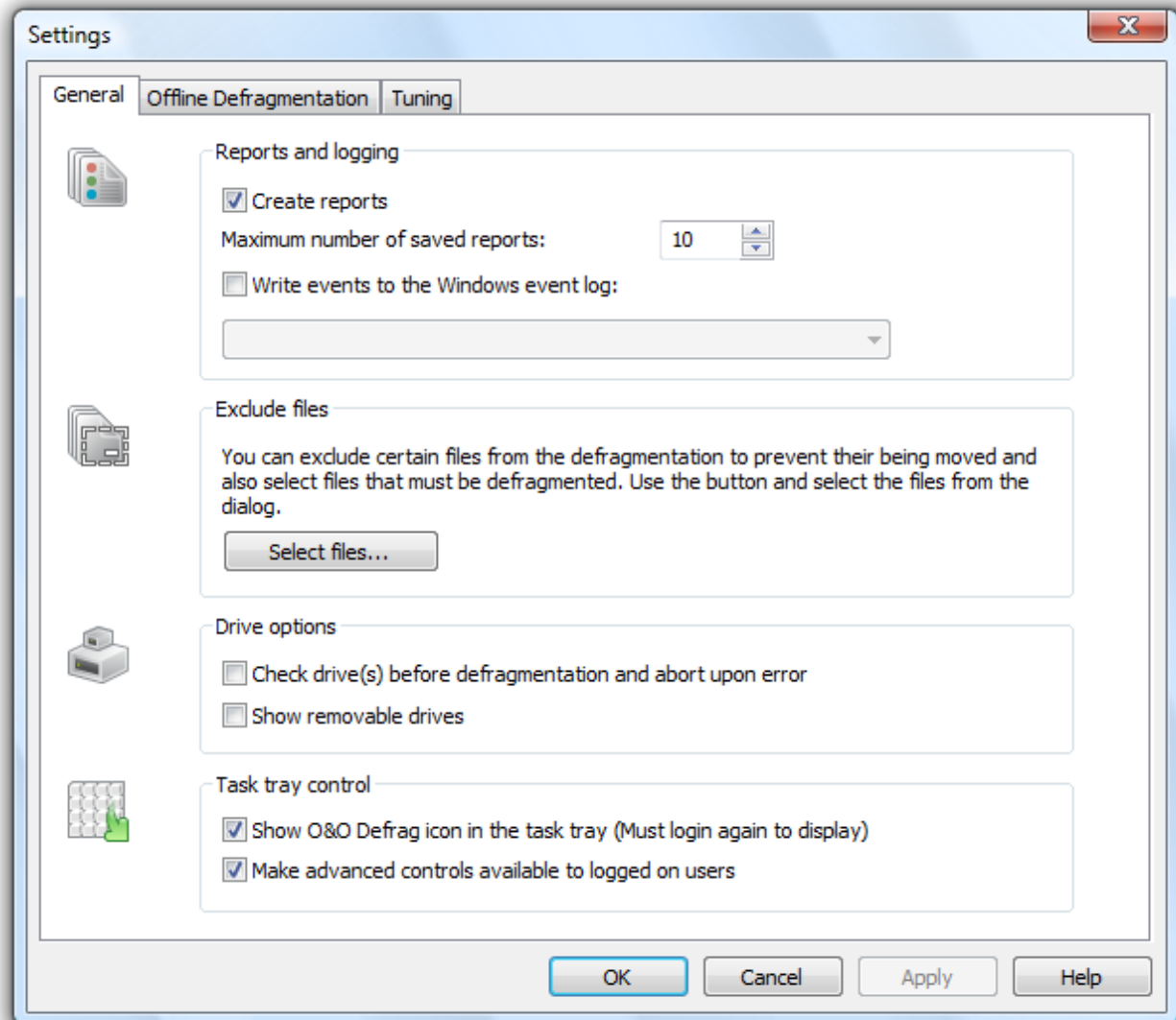
Under Settings/General/Task Tray Control you can assign icons to various functions.

Deactivating this function means the user can only monitor the defragmentation but not control it.

Deactivating this function means the user can only monitor the defragmentation but not control it.

### Set Hibernation Mode

Set Hibernation Mode This will stop all defragmentation jobs or make sure they will not be started.



General

### Check Drives before Defragmentation (chkdsk)

You can have O&O Defrag check the integrity of your drives before a defragmentation. You can have O&O Defrag check the integrity of your drives before a defragmentation. This check is like the Windows chkdsk function but errors that are found will not be corrected. These will have to be corrected manually using the chkdsk function.

**Please note:** This option in O&O Defrag makes use of the native Windows chkdsk functionality. When activated, O&O Defrag executes a chkdsk on the selected drive(s) prior to running a defragmentation. If chkdsk encounters a problem or error, O&O Defrag will refuse to initiate a defragmentation. If chkdsk encounters a problem or error, O&O Defrag will refuse to initiate a defragmentation. **As an added warning, a yellow triangle will appear next to the affected drives.**

A test of the connected drives in Windows can also be run manually. It is strongly recommended to thoroughly check a drive if an error is detected. More information can be found in the Windows Help file.

## Online- and Offline-Defragmentation

O&O Defrag can carry out defragmentation runs online and offline.

In this context, "online" means that the defragmentation is carried out in the background while your system is running. Thus, you can carry on your work as usual. However, some system files are locked by the operating system while it is running, and these files can only be defragmented before the operating system has locked them. This is possible in the so-called start phase of Windows. As this occurs before the usual operating system processes take place and you, as a user, are unable to start any applications, defragmentation at this time is known as **Offline defragmentation** (or often Boot-time defragmentation).

The following table shows which file types can be defragmented on- and offline, according to which operating system you are running. If online defragmentation is impossible, O&O Defrag will automatically select offline defragmentation. This will take place at the next system start. You can stop this at any time by pressing any key.

The options for offline defragmentation can be viewed and changed simply and conveniently by way of the Options dialog.

	Windows 7/Vista/XP/2003/2008	Windows 2000
System files	online+offline	offline only
Paging file	offline only	offline only
MFT (NTFS volumes)	online+offline	offline only
Registry	online+offline	offline only
Folders (NTFS volumes)	online+offline	online+offline

### Offline Defragmentation

Using O&O Defrag, you can perform a so-called Offline Defragmentation – a defragmentation that is run upon system start-up, right before the whole operating system has been loaded. It is now possible, using this feature, to defragment files which are in exclusive use by the operating system. These files are usually the page file, the registry databases, the hibernation file and the MFT (Master File Table).

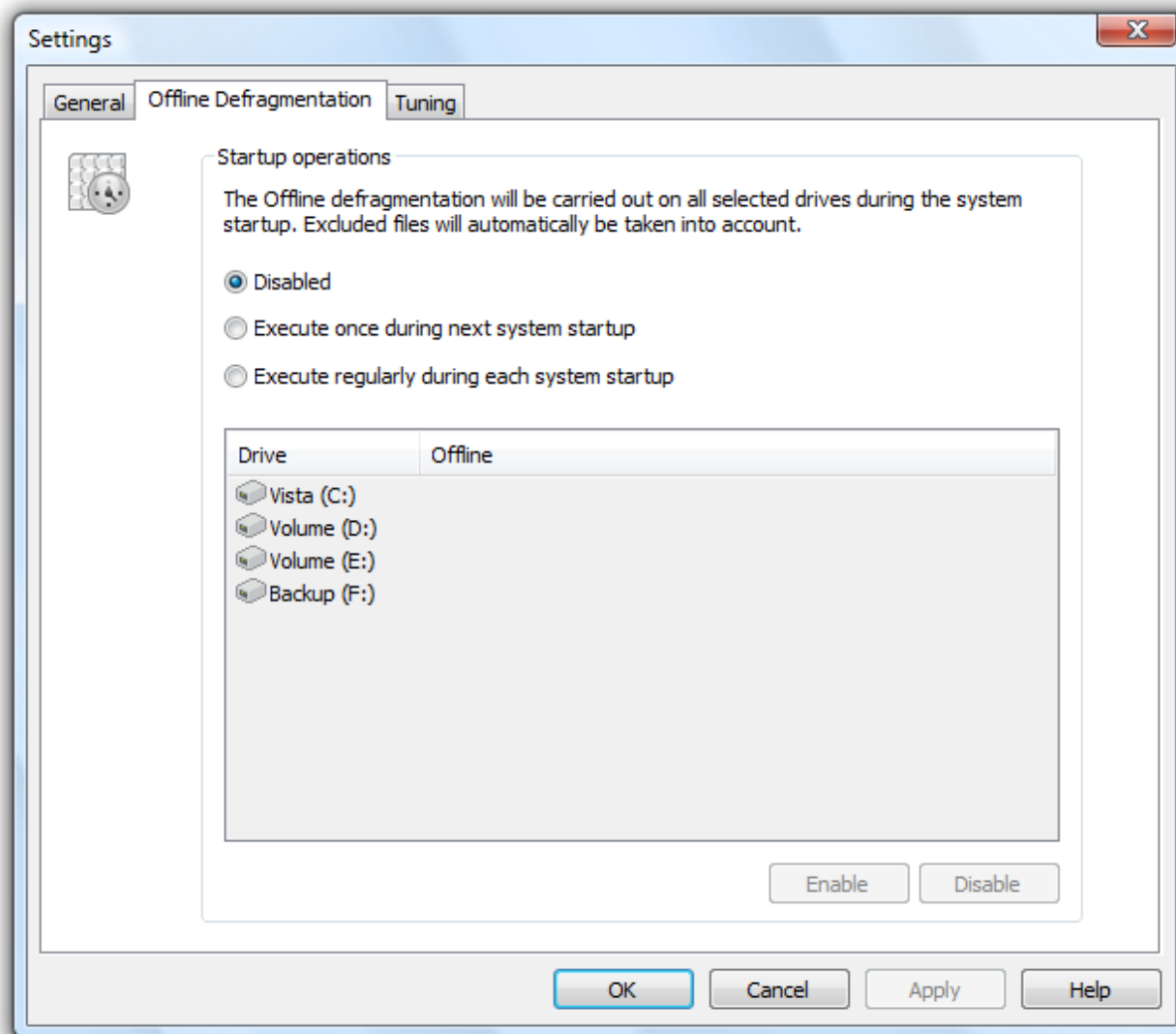
**Please note:** starting from Windows XP/2003, MFT and registry databases are able to be defragmented online. An offline defragmentation for these files is not required.

Please use the following steps in order to enable the offline defragmentation:

- Please choose whether you would like the offline defragmentation to be **Run once during next system startup** or **Run regularly during each system start-up** (at each start-up).

- Please select the drives to be defragmented upon system start-up from the drives list and enable the offline defragmentation using the **Enable** button. Please highlight the desired drive in the list.

You can disable the offline defragmentation at any time by using the **Disabled** button.



Settings: Offline Defragmentation

## Continue Working During Defragmentation

O&O Defrag is the only defragmentation software to offer you the O&O ActivityGuard. This tool checks the CPU usage during the defragmentation process. Whenever you require the full performance of your computer, it will lower the strain caused by O&O Defrag to a minimum. O&O Defrag will keep operating unnoticed in the background which enables you to continue working undisturbed during the defragmentation. At times when you're not using the PC, for example at lunchtime, O&O ActivityGuard notices this and automatically allocates more resources to O&O Defrag.

To enable the O&O ActivityGuard Pro, under **Defragmentation** and **Settings/Tuning** select the option **O&O Autosense** or enter a maximum value in percentage terms of what should be put aside for the defragmentation.

**More:**

[Tuning](#)

### Tuning

O&O Defrag offers many ways in which you can make your defragmentation even more effective and efficient. The standard configurations are already optimized for most systems which means you won't normally have to make any alterations here. You can, however, also adjust the tuning options yourself.

#### O&O ActivityGuard Pro

This feature controls the demand on your system and automatically adapts it to current conditions. You can thereby work undisturbed while your system is being defragmented in the background. This is particularly helpful if you don't know exactly when a computer will be available for a defragmentation. Thanks to the O&O ActivityGuard Pro, you don't have to worry about that anymore. The O&O AutoSense method regularly performs an automated check on how much of your resources are available for the defragmentation and is the recommended configuration.

If you want to run the defragmentation as quickly as possible, you should use all the system's power for this purpose. Please note that it is considerably difficult to work undisturbed during defragmentation on heavily strained or older systems.

You can also enter the percentage of the resources O&O Defrag should use manually. O&O Defrag will then limit itself to this percentage and the remaining resources will be available for other applications.

#### Running a Defragmentation

You can defragment your drives either parallel or sequentially. Sequential defragmentation means that one drive will be defragmented after the other, in alphabetical order.

If you choose parallel defragmentation, drives (partitions) that lie on physically separate hard disks can be defragmented simultaneously. This makes for a much faster defragmentation. If you only have one physical hard disk in your computer, your volumes will be defragmented sequentially.

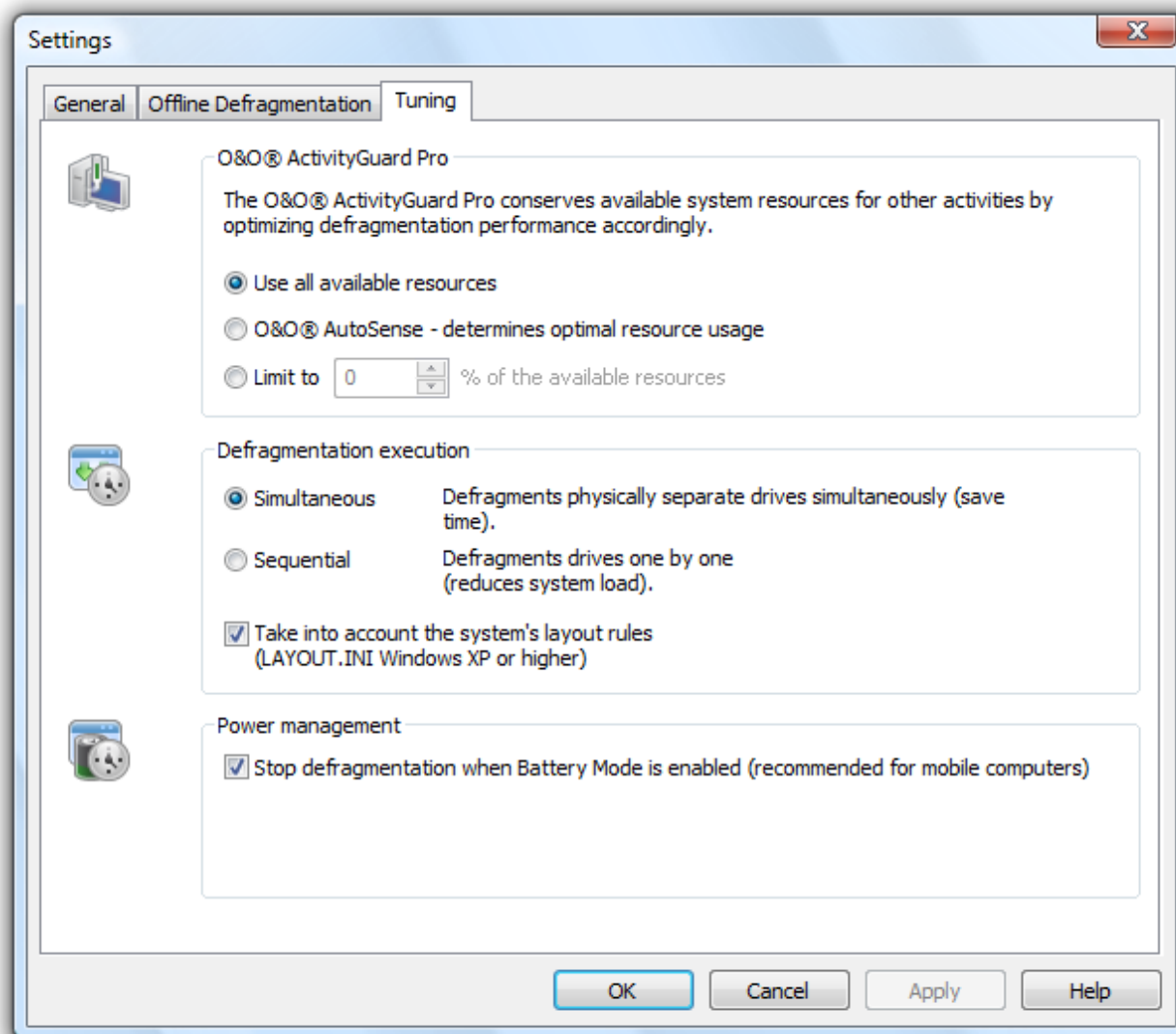
**Only in Windows XP and Windows Vista:** During defragmentation, the Layout.ini-File is used as a reference to optimize the layout of files on the hard disk. When you select to take into account the file Layout.ini during defragmentation, O&O Defrag will defragment according to the order of system files dictated by the operating system. Doing so can accelerate the speed at which these files are loaded during a system's startup.

#### Power Management

Power Management is a special feature designed for notebooks. Using it, you can make sure that defragmentation will not take place if the notebook is working from battery power. This will save power on your battery. The notebook will only be defragmented when it is reconnected to the main power.



If your computer is switched off, O&O Defrag can "wake" it from standby mode in order to run a defragmentation. You can therefore defragment at night or on the weekend without having to leave your computer running all the time, and without your having to be there!



Tuning Settings

## Zone filing

The filing into zones divides the data logically. A special algorithm makes sure that the data on the disk is optimally organized after defragmentation. Files are organized and moved into zones depending on their intended use and frequency of access. As a result, system files, which have to be accessed quickly will be separated from others.

Free space is located between the zones so that new files can be moved directly into the correct zone. This logical grouping slows down successive fragmentation; new fragmentation is permanently reduced and prevented.

Three zones are created as a standard. In the zone dialogue you can arrange files individually (see [User defined zone filing](#)).

### 1.Zone

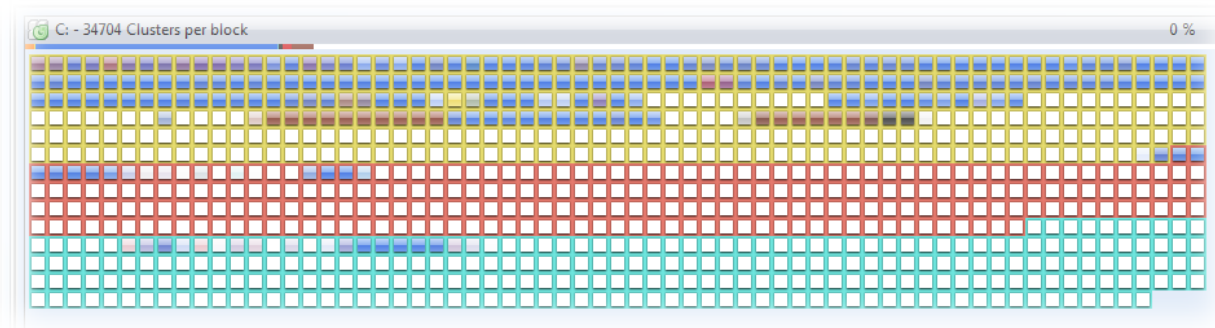
Windows and installed programs/applications

### 2.Zone

user data, e.g. Office documents, temporary files, user profile

### 3.Zone

Seldom used data and very large files, e.g. Windows Recycle Bin and files over 500 MB



The zones in the block view will be color-coded

### More:

[User defined zone filing](#)

## User-defined zone filing

You can create individual settings in the default configuration if you define your own rules for zones. Using these rules, and based on the file name and path, it will be decided to which zone a file should be moved.

Click the corresponding zone on **Add**. Look at the following table to check out how to spell out rules:

If you want to work on a file, then enter the absolute path.

**Example:** c:\windows\explorer.exe - only this file is worked on

If you want to include all sub-entries (files and sub-folders) of a folder in a rule, the expression has to end with "\*" .

**Example:** c:\windows\system32\\*

Only include a folder without sub-folder:

**Example:** c:\windows\system32

You want to move all files of a certain type to a zone, because they are seldom or never changed or accessed.

**Example:** \*.omg includes all files and folders ending in .omg . The star leaps over a random number of symbols and looks for the text behind the star.

Certain files with a certain name and file extension should be included.

**Example:** \*test\*123\*.txt includes all text files, which contain a "test" and "123" in their name. So: test123.txt (the star can also leap over the zero symbol) or xtestyz123abc.txt.

Files can also be approached that are not constrained by where they are stored in a drive.

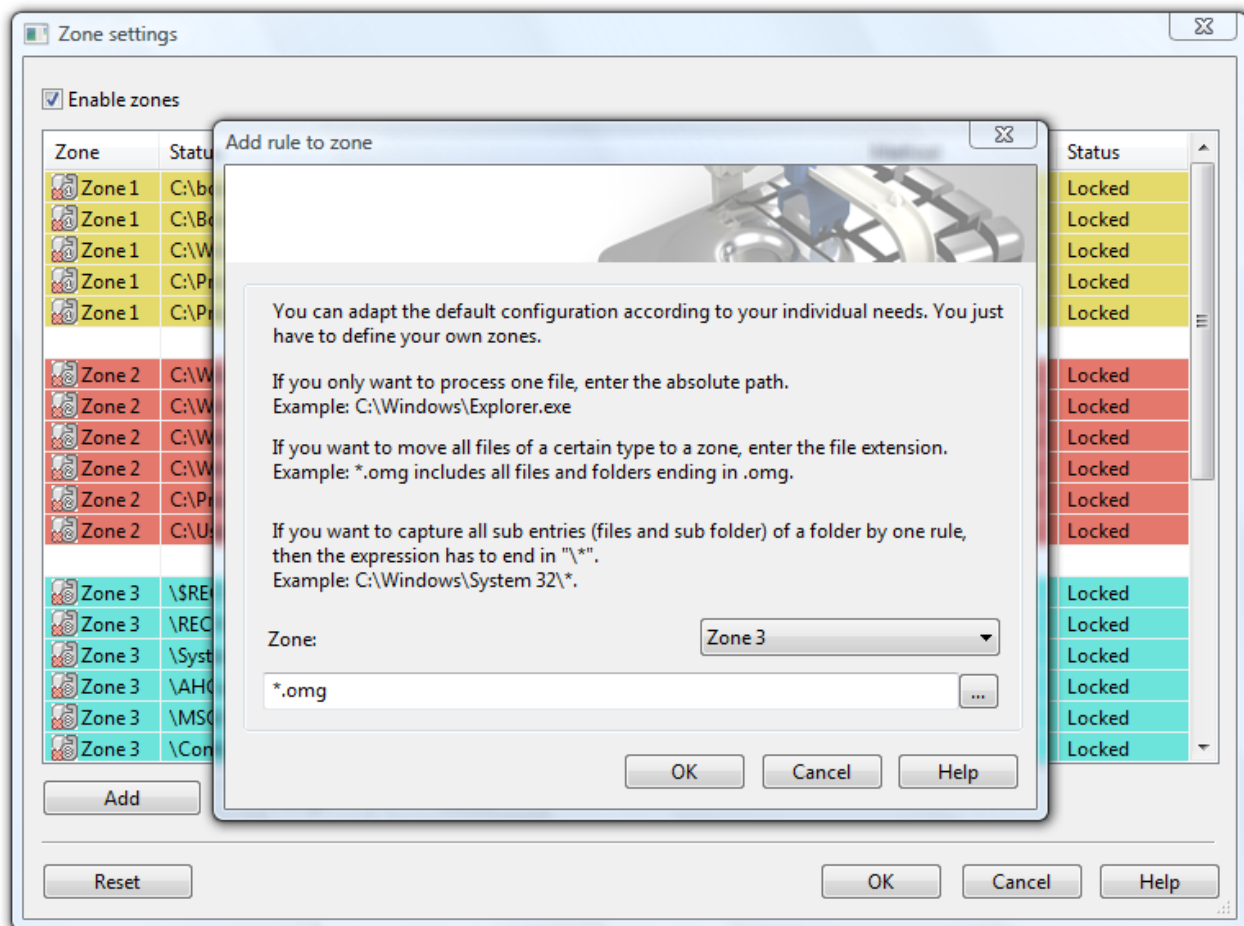
**Example:** The rule \datei.txt finds all files, which are called file.txt, and lie in the root directory of any drive. If no drive letter is given and the rule starts with a backslash, a path is meant - independent from the drive, where it is located.

If you want to include all sub-folders of a folder, use the backslash in the beginning and at the end of the folder name and the star.

**Example:** \windows\\* all sub-entries of all Windows folders on all hard disks

**Further examples:**

c:\hall?.txt - Here the question mark is any symbol (not empty) symbol. As a result, you can also find c:\hallo.txt and c:\halli.txt here, or c:\hall8.txt .



Zone filing

## Previous defragmentation methods

O&O Defrag offers you five different methods of defragmenting your computer, besides the [new methods](#) :

- [STEALTH](#)
- [SPACE](#)
- [COMPLETE/Access](#)
- [COMPLETE/Modified](#)
- [COMPLETE/Name](#)

All methods can be used on all drives, including volume sets, stripe sets with and without parity, etc., and are equipped for best possible data security. This is achieved by working together with the defragmentation routines integrated into Windows, and makes sure that data is not lost if your computer or network crashes, or if there is a power cut.

**Note:** Please bear in mind that the usual methods can only be selected, if zone filing is disabled.

### Performance new and old methods of O&O Defrag

	New Methods O&O Defrag 12			Previous Methods		
	Optimize	Optimize/ Quick	Optimize/ Complete	Space	Stealth	Complete/ XYZ
Defragmentation of files	+++	+++	+++	+++	+	+++
Defragmenting the free space	+++		+++	+++		+++
Prevention of further fragmentation	+++	+	+++	+		+
Results of high-level fragmentation*	+++	+	+++			+
Suitability for very large files (> 4 GB)	+	+	+		+	
Suitability for many files (> 1 M)	+	+++		+	+++	
Run time of first defragmentation**		+		+	+++	

Run time of repeated defragmentation	++	++	+	++
RAM-Requirement	+	++	+	++
CPU Load	+	++	+	++



well suited (with runtime: quick)



very well suited (with runtime: very quick)

\* Our understanding of high-level fragmentation is a rarely cared for drive, which contains many very heavily fragmented files and only has little space available.

\*\* The run time of the first defragmentation lasts longer than with the previous version, since the data has to be divided into zones.

#### More:

[Conflicts with Shadow Copies during Defragmentation](#)

[STEALTH Methode](#)

[SPACE Methode](#)

[COMPLETE Access Methode](#)

[COMPLETE Modified Methode](#)

[COMPLETE Name Methode](#)

### Conflicts with Shadow Copies during Defragmentation

The operating systems Windows 7, Windows Vista, Windows XP64, Windows Server 2003 and 2008 offer users the ability to create "Shadow Copies" for protecting their data. This new feature automatically creates copies of files currently in use at regular time intervals. Since Windows only captures changes in the files, not a lot of additional space is normally needed. Accidentally deleted files and folders or previous versions of documents can be easily restored using a convenient command accessible through the context menu. Simply right-click the object you want to restore and click "Restore Previous Versions".

At the moment of installation Windows Vista (or newer) the shadow copy mechanism is set as default. With Windows XP64 and Windows Server 2003/2008 systems it is deactivated by default.

During defragmentation, files on a volume get moved. Vista perceives this as a deletion and creates a new Shadow Copy for the moved file. Because defragmentation requires the moving of multiple files, many Shadow Copies are created, which in turn leads to the higher demand on disk space. This behaviour may overwrite older shadow copies with newer ones. Unfortunately, this can also lead to the deletion of the system recovery points! These consequences are most frequent when using the COMPLETE method.

Shadow copies are filed in the folder “System Volume Information” and cannot be defragmented. This can end up having a negative influence on the result of the defragmentation. There is, on the other hand, almost hardly any loss in performance caused by fragmented shadow copies. Although these files will be displayed as fragmented, they still have only a minimal influence on the operating speed of your system.

You could disable the shadow copies to achieve improved defragmentation results but you would then wind up losing the operating system’s built-in backup functionality. That’s why we recommend your leaving the shadow copies enabled.

Microsoft is already aware of this problem, as this issue also occurs in the Windows native defragmentation software. More details may be found in this article from Microsoft: <http://support.microsoft.com/default.aspx?kbid=312067>

In Windows XP64 and Windows 2003 Server, this problem will not occur as long as storage volumes have been formatted with a cluster size of 16KB or larger. If this cannot be changed or Windows Vista is in use, this issue can be avoided by first performing a STEALTH defragmentation followed by a SPACE defragmentation.

#### **Notes about background defragmentation enabled by default:**

The background defragmentation packs all fragmented files quickly and effectively together. It is, however, designed to use the least amount of resources so that the system is only minimally burdened and the user can continue working undisturbed. It is, therefore, not possible for the background defragmentation, as a result of restructuring, to recreate the operating system’s prescribed optimal order of files on the hard disk. To guarantee optimal performance, we recommend that you also run a regular (for example, monthly) SPACE or complete method defragmentation.

Please note that under Windows Vista, Windows 2003 Server and Windows Server 2008, a complete restructuring defragmentation of drives backed-up through shadow copies might lead to the loss of older savesets. This is a problem known to Microsoft, and these drives are marked accordingly in O&O Defrag user interface. We therefore recommend letting only O&O Defrag background monitoring function run on these drives.

## **STEALTH Method**

The STEALTH method differs from the other methods in that it is much faster and uses much less main memory for the defragmentation.

**More:**

[Algorithm](#)

[Recommended Application](#)

## Algorithm

The STEALTH method is based on our unique STEALTH technology and allows an unprecedented level of defragmentation on computers having a large number of files, little free space or available main memory.

This method defragments all fragmented files and tries to consolidate them in order to optimize available free disk space. Speed and resource usage are the main considerations here and the method is therefore not quite as thorough as the SPACE and COMPLETE methods.

## Recommended Application

The STEALTH method is particularly recommended for the following systems. STEALTH can also be used for regular defragmentation runs.

- Initial defragmentation of your system
- Computers with few available resources, as the method does not greatly increase the CPU usage and does not require much free hard disk space
- Servers with very large hard disks (e.g. more than 4 terabytes)
- Computers with a very large number of files (more than 3,000,000 files)

## SPACE Method

The SPACE methods offer you a great solution for heavy fragmentation. It also allows you to consolidate your data so that the amount of contiguous free space is as large as possible and further fragmentation is prevented.

The SPACE method is the best one for your initial defragmentation and for defragmentation in the background, as long as there is enough free space on the hard disk and the number of files is not too great. Otherwise, you should consider using the STEALTH method.

### More:

 [Algorithm](#)

 [Recommended Application](#)

## Algorithm

All fragmented files will be defragmented, and then placed into the free slots in which they fit. This maximizes contiguous free space. This method is very quick and efficient and it does reorganize your volume, but not as thoroughly as the COMPLETE methods.

The SPACE method is ideal for the first defragmentation run on a system that has never been defragmented, as it requires far less free space than the COMPLETE methods.

## Recommended Application

The SPACE method is particularly recommended for the following systems. SPACE can also be used for regular defragmentation runs.

- Initial defragmentation of your system
- Computers with few available resources, as the method does not greatly increase the CPU usage and does not require much free hard disk space



- Servers with large hard disks (e.g. more than 1 terabyte)
- Computers with a large number of files (more than 100,000 files)

## COMPLETE/Access Method

The COMPLETE/Access method defragments your files and reorganizes your file structure. Although this method is slower than the STEALTH and SPACE methods, it guarantees maximum system performance when your files are being read.

The COMPLETE/Access method is suitable for servers and workstations. Please bear in mind that this method uses a lot of central memory due to the reorganization of your system. If this is likely to be a serious problem for your system, we recommend you use the STEALTH or SPACE methods.

### More:

 Algorithm

 Recommended [Application](#)

### Algorithm

Files are sorted according to when they were last accessed. The files that have been accessed the least will be placed at the beginning of the partition and those accessed most frequently are put near the end. Seldom-used files are defragmented and will not need to be moved in future. Frequently-used files are placed at the end of the drive. This strategy means that future defragmentation runs will require the least amount of time, as fewer files need to be checked and defragmented.

### Recommended Application

The COMPLETE/Access method is particularly suitable for use on the following systems. If you want to use the COMPLETE/Access method for your regular defragmentation runs, you should bear in mind that you only use this method on your drive. Combining various methods (COMPLETE, STEALTH, and SPACE) can result in defragmentation taking much longer, as the file system would need to be reorganized each time.

- Maximizes the read access performance on servers
- For regularly defragmenting your volumes
- On computers that have sufficient resources available when the defragmentation takes place – CPU usage is likely to increase significantly (it is strongly recommended that you use the O&O ActivityGuard). A larger amount of free disk space is necessary with this method.
- All kinds of servers and workstations

## COMPLETE/Modified Method

The COMPLETE/Modified method defragments your files and also reorganizes your file structure. Although this method is slower than the STEALTH and SPACE methods, it guarantees maximum system performance when your files are being read.

The COMPLETE method is particularly suitable for databases and file servers. It is important to bear in mind that this method requires quite a lot of main memory due to file reorganization. If this is likely to be a serious problem for your system, we recommend you use the STEALTH or SPACE methods.

### More:

➤ Algorithm

➤ Recommended [Application](#)

### Algorithm

Files are sorted according to the date on which they were last changed. The files which have not been changed recently are placed at the beginning of the partition and those recently changed are placed at the end. This option is a good one for file or database servers containing files that have never been changed (e.g. system files), but where others, on account of their size or content, are frequently modified. (e.g., database files)

This strategy means that future defragmentation will require the least amount of time, as only a few files need to be checked and defragmented.

### Recommended Application

The COMPLETE/Modified method is particularly suitable for use on the following systems. If you want to use the COMPLETE/Modified method for your regular defragmentation runs, you should bear in mind that you only use this method on your drive. Combining various methods (COMPLETE, STEALTH, and SPACE) can result in defragmentation taking much longer, as the file system would need to be reorganized each time.

- Maximizes the performance for write access on servers
- For regularly defragmenting your volumes
- On computers that have sufficient resources available when the defragmentation takes place – CPU usage is likely to increase significantly (it is strongly recommended that you use the O&O ActivityGuard). A larger amount of free disk space is necessary with this method.
- All kinds of servers and workstations

### COMPLETE/Name Method

The COMPLETE/Name method defragments your files and also reorganizes your file structure. Although this method is slower than the STEALTH and SPACE methods, it guarantees maximum system performance when your files are being read.

The COMPLETE/Name method is particularly suitable for system drives. It is important to bear in mind that this method requires quite a lot of main memory due to file reorganization. If this is likely to be a serious problem for your system, we recommend you use the STEALTH or SPACE methods.

#### More:

➤ Algorithm

➤ Recommended [Application](#)

### Algorithm

Files are sorted alphabetically from the beginning to the end of the partition and this leads to quick access to files in a directory. When Windows starts up, many system files will be read in sequence from the \WINDOWS and the \WINDOWS\system32 directories (DLLs, system drives, etc.) and the start-up time will therefore be shorter.

This method is particularly recommended for computers on which the files rarely change. This reduces the reorganization time that is needed for every defragmentation.

### **Recommended Application**

The COMPLETE/Name method is particularly suitable for use on the following systems. Please bear in mind that if you use the COMPLETE/Name method for your regular defragmentation runs, it should be the only one used on the drive. Combining various methods (COMPLETE, STEALTH, and SPACE) can result in defragmentation taking much longer, as the files will have to be rearranged each time.

- Maximizes the performance for the read access to workstations
- For regularly defragmenting your volumes
- On computers that have sufficient resources available when the defragmentation takes place – CPU usage is likely to increase significantly (it is strongly recommended that you use the O&O ActivityGuard). A larger amount of free disk space is necessary with this method.
- All kinds of servers and workstations

## Set up periodic defragmentation

Defragmentation on a regular basis is the key to maintaining top performance. O&O Defrag offers you a sophisticated scheduling system so that you don't have to run the defragmentation manually each time.

So-called defragmentation jobs (in short, jobs) allow you to define the time, action and other parameters for the defragmentation. You can configure all options the way you do in the Settings dialog.

You have the power to create, change or delete jobs. If you want to leave out a job for a short period of time, but don't wish to cancel it completely, you can disable it. In this way, the job will not be run until you once again enable it.

With the automatic scheduling system, O&O Defrag automatically detects the right time for the next defragmentation using heuristic methods. As a rule of thumb: the more severely and quickly your system fragments, the more often it will be defragmented. If your system does not show a high degree of fragmentation, the frequency of defragmentation runs will decrease.

**More:**

[Create new job](#)

[Changing a Job](#)

[Delete job](#)

## Creating New Jobs

Under **Jobs and Reports** in the Ribbon Bar click **Create Jobs**.

You can then define all options for this job in the O&O Defrag job dialog.

**More:**

[Name](#)

[Schedule](#)

[Screen Saver Mode](#)

[Drives](#)

[General](#)

[Tuning](#)

[Running Batches Before and After a Job](#)

### Name

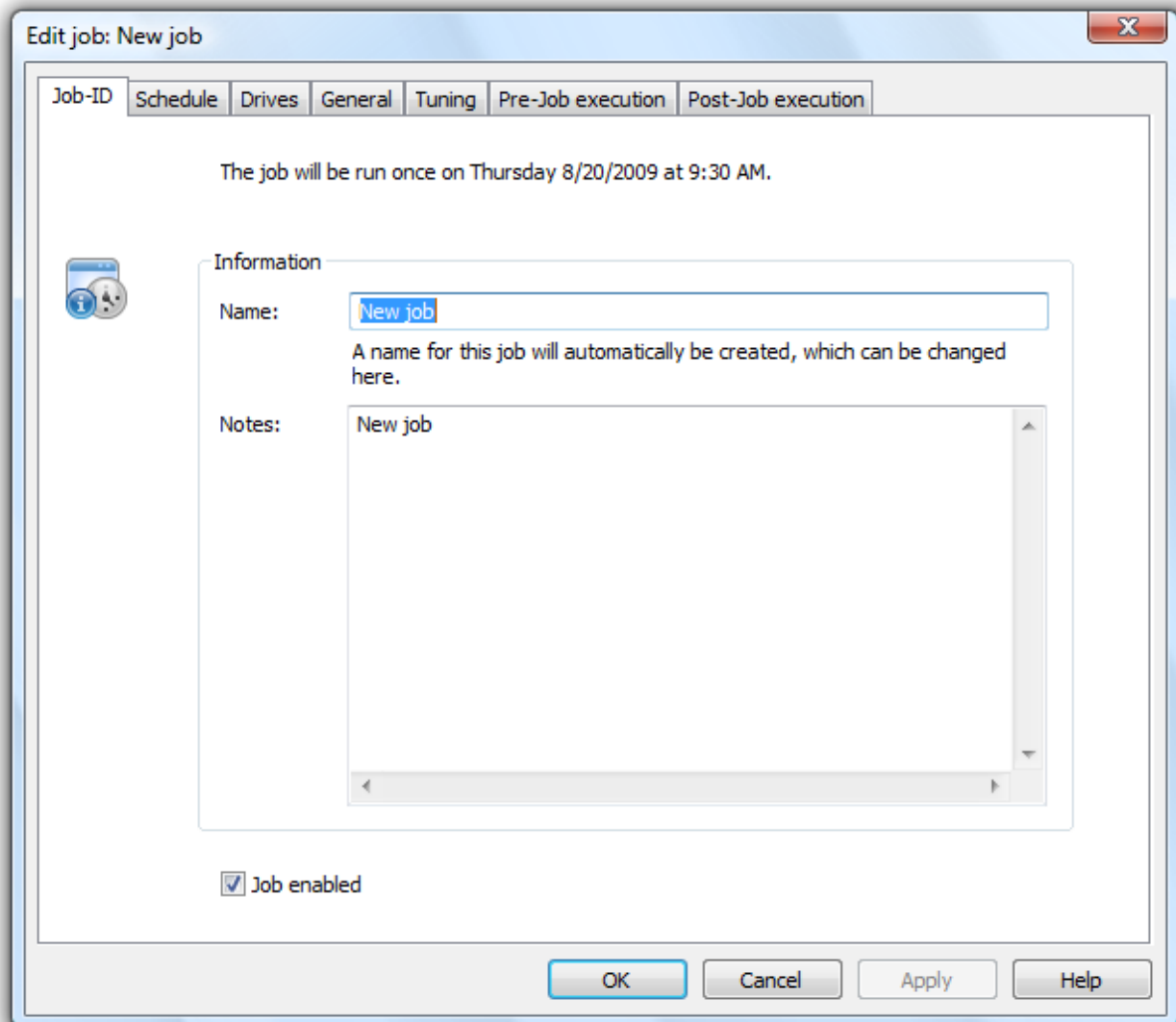
Enter the name of your job. This will be used for the creation of reports and serves as information about which action is being carried out by the job. The name of the job is only important for this purpose and it is possible to use this name for other jobs too.

In the field **Notes**, you can enter any other information you wish to remember or share about the job.

### Job Enabled

## Set up periodic defragmentation

If you want to leave out a job for a short period of time, but don't wish to delete it altogether, you can disable it. It won't be run until you enable it once again.



Creating a New Job

### Schedule

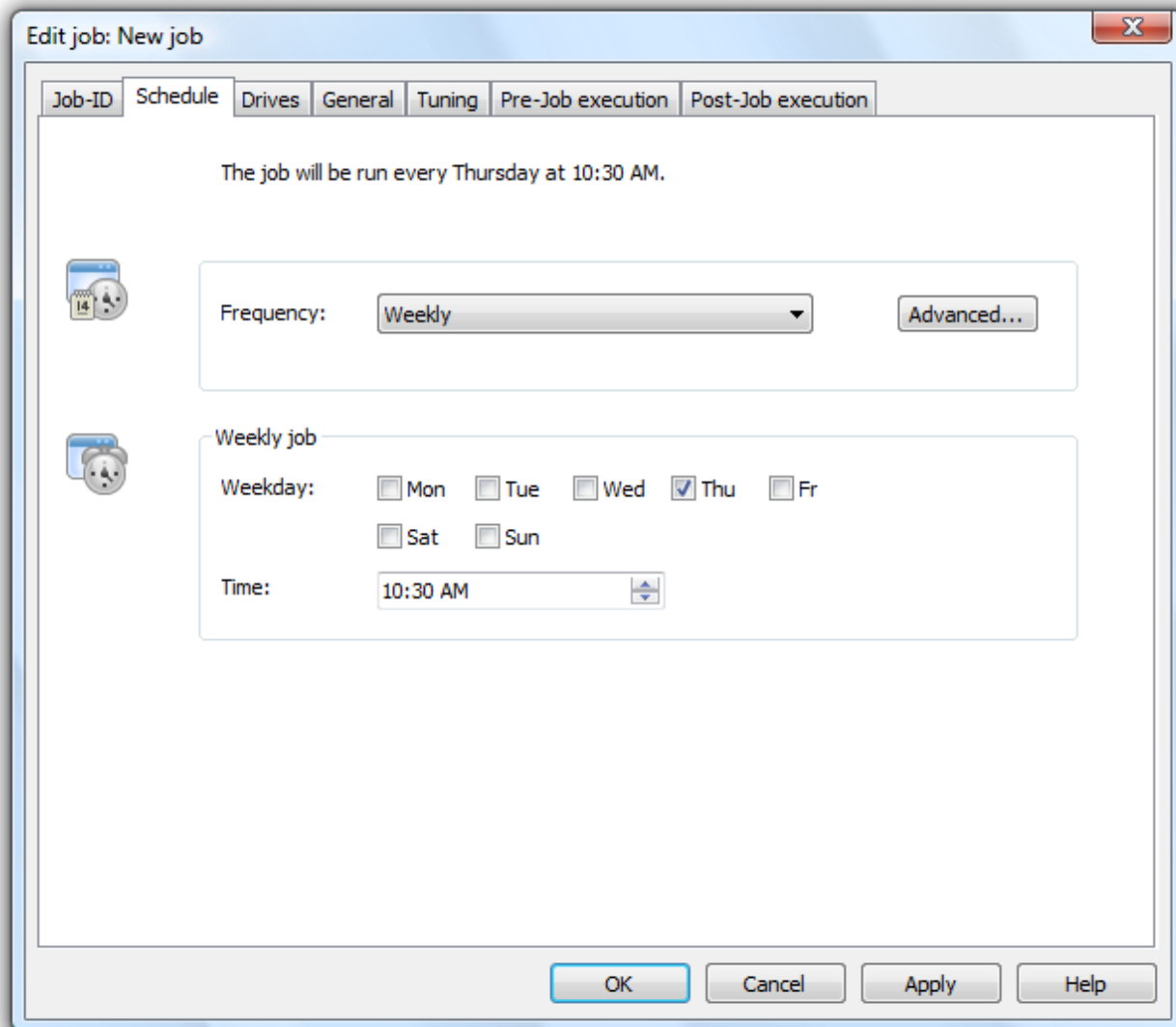
On the scheduling page, you can define the time at which the job should be carried out. You can run the job just once, weekly or even automatically. The options change according to the frequency you've chosen.

You can also enter advanced options. The start and end dates let you define the period over which the job should be carried out. The maximum running time limits the running of a job to a particular time frame, after which the job will stop whether it has finished or not. The job will then start from where it left off when the next defragmentation run begins.

If you want a job to be run more than once a day, enter the required time interval under **Advanced/Start date**.

## Set up periodic defragmentation

The option of starting the job later if a defragmentation is not possible at a given time is intended for systems that are not always on. Normally, the job would simply be left out if the computer is switched off. If this option is enabled, the defragmentation will be run whenever the computer is switched back on. This ensures that your job won't be left out.



Job Dialogue: Schedule

### Screen Saver Mode

O&O Defrag can be instructed to always start when the screen saver is active. This will allow O&O Defrag to run automatically when your computer is idle.

Create a new job for doing this and in the **Schedule** tab, select **Frequency/ScreenSaver**. All other configurations will be handled automatically by O&O Defrag.

As soon as the screen saver is ended (through user activity on the computer), O&O Defrag ceases operation. When activated again, either manually or automatically, O&O Defrag will continue from where it left off.

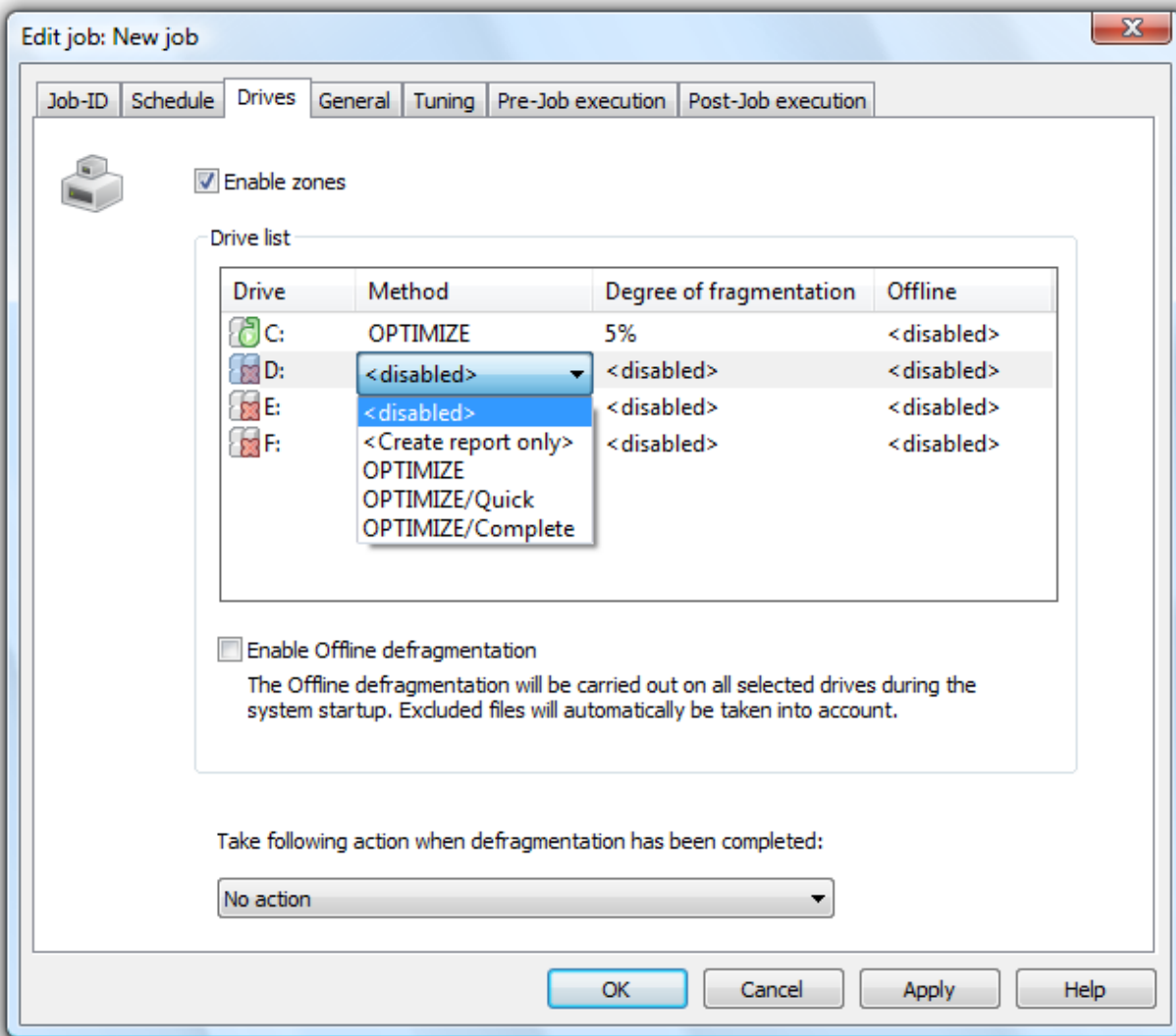
Please note that O&O Defrag will only run when the screen saver is enabled in Windows. More information on enabling the screen saver can be found in the Windows help file.

### Drives

Select the drives and defragmentation methods you wish to use. You can also enable offline defragmentation for each drive, so that blocked files can be defragmented when your system starts up.

By entering a minimal fragmentation level, you can define the fragmentation level at which defragmentation will automatically be started. You can thereby reduce significantly the number of defragmentation runs needed, if you don't require a fully defragmented system all the time. A minimal level of fragmentation 0% means that defragmentation is underway at all times. We would recommend you enter a value of between 2% and 5%.

If your system BIOS supports power management functions, you can get O&O Defrag to shut down or restart your system when the defragmentation is finished. If you chose to restart, the program can perform an offline defragmentation run. You can then leave your computer while it is being defragmented – It will shut down afterward automatically.



Job dialog: Selection of drives and methods

## General

You can determine the settings for each job as well as defining them for a computer. These settings will then override the computer settings while the job is being run.

## Reports and Logging

You can create status reports in an HTML format. A maximum of 999 reports can be created and saved.

You can enable this option if you want to log all O&O Defrag actions simultaneously in the Windows result log. You'll be able to specify the level of detail you want recorded, whereby Level 1 records only errors as opposed to Level 4 which saves all information. Please note that Level 4 can include an enormous number of results which may end up using considerable disk space.

## Exclude Files

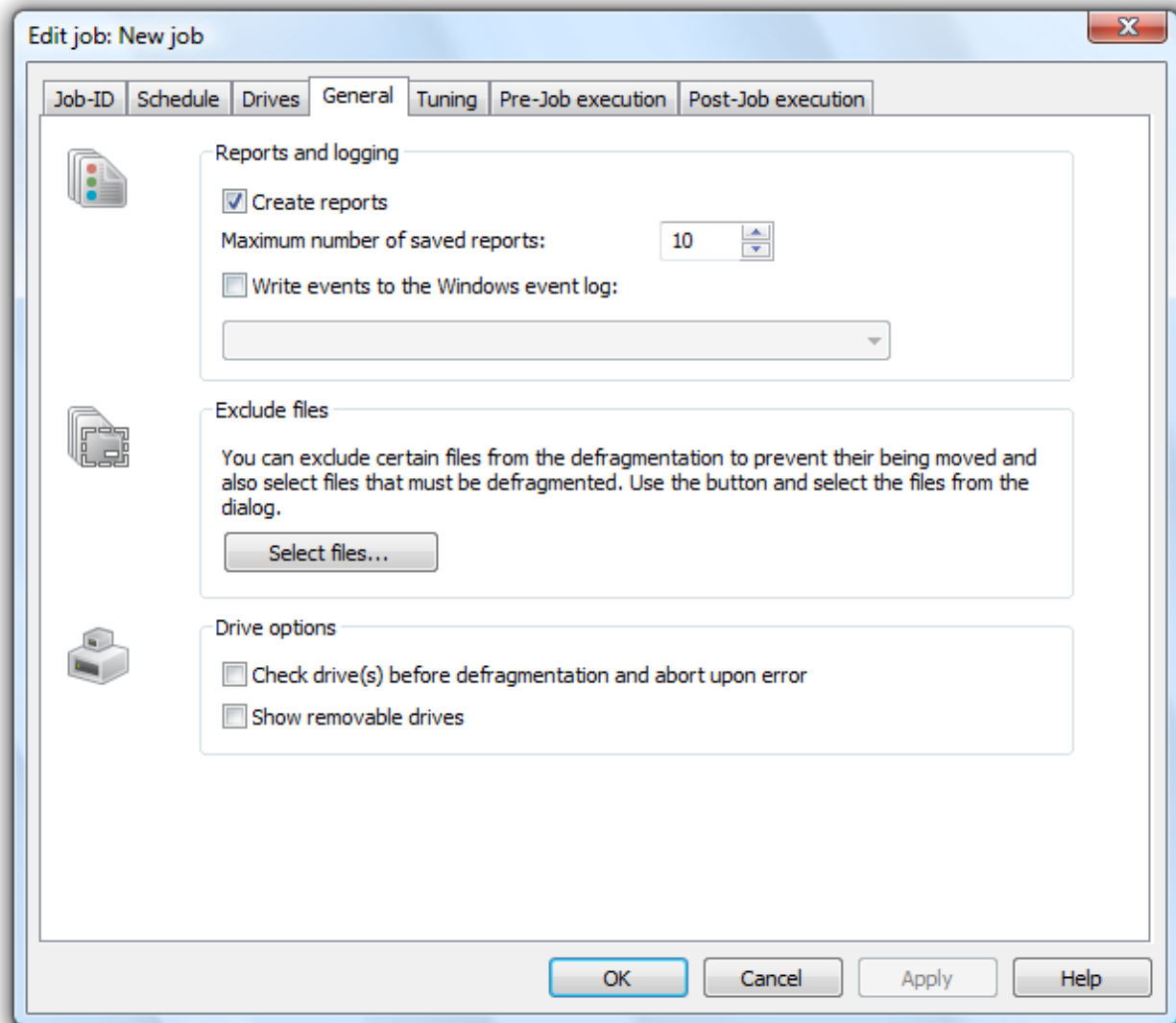


## Set up periodic defragmentation

If you don't want to include certain files and/or directories in a defragmentation, you'll be able to specify them here. These files will be ignored in the defragmentation.

### Check drives

You can have O&O Defrag check the integrity of your drives before a defragmentation. If O&O Defrag finds an error on one of your drives, the defragmentation will not be run (for safety reasons). This check is like the Windows chkdsk function but errors that are found will not be corrected. This can be done manually using the chkdsk function.

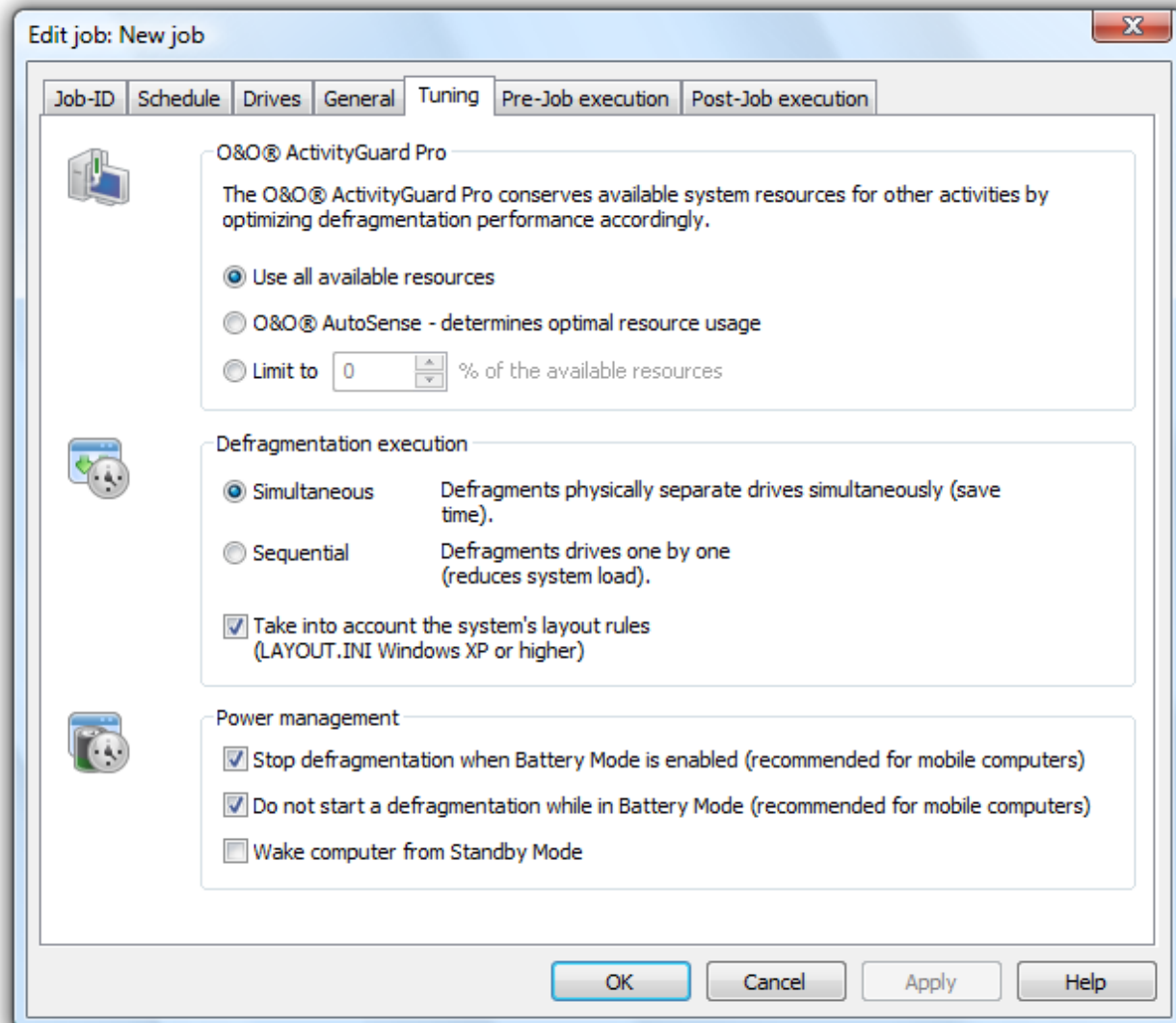


Job Dialogue: General Settings

### Tuning

O&O Defrag offers you many ways of making your defragmentation even more effective and efficient. The standard options are optimized for most systems, so these won't normally have to be changed. You can, however, adapt these configurations to suit your requirements.

You can read more about this in chapter [Tuning](#) in the settings.



Job Dialogue: O&O ActivityGuard Pro

## Running batches before and after a job

Running batch commands before and after a job enables you, for example, to pause certain Windows services before defragmenting and then continuing them afterwards. Files that are normally in use by other applications can now be defragmented online. If you are using O&O Defrag on a Microsoft Exchange or SQL server, you can pause these services, run defrag, and then automatically restart them. Scripts are no longer needed.

## Running a batch pre-job

When this option is enabled, all the commands entered into the text field will be run before defragmentation. You can also import an existing file and insert its contents into the text field. To do so, simply click the Import button and select the desired file in the dialog box (.BAT, .CMD, or .TXT). Confirm your selection by clicking **OK**.

**Please note:** All commands must exist and be capable of running on the target computer. All commands will be carried out under the SYSTEM account.

### Running a batch post-job

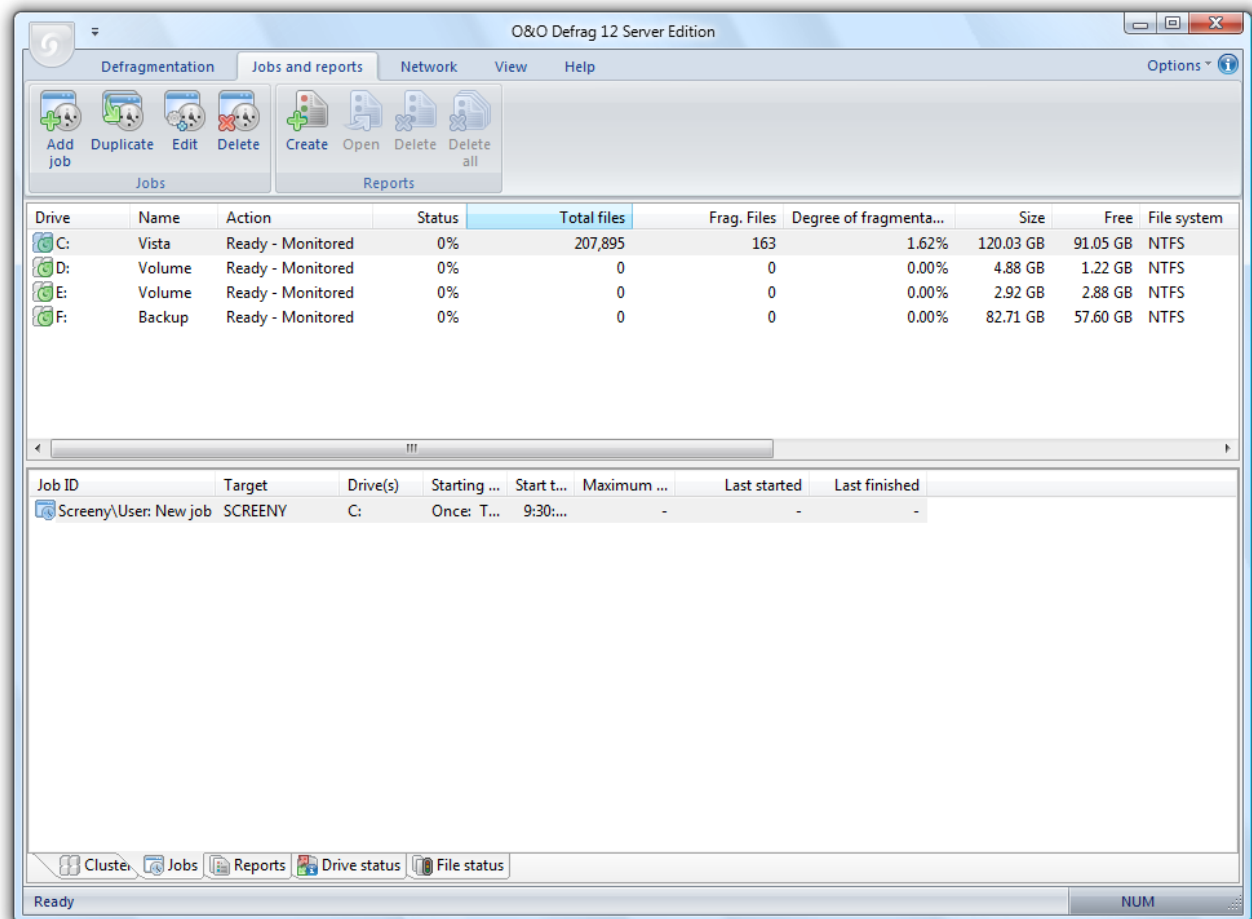
If this option is enabled, the commands entered in the text field will be run after defragmentation. The entering and running of commands after a job are similar to those run before a job.

**Please note:** All commands must exist and be capable of running on the target computer. All commands are run under the SYSTEM username with the maximum system permissions.

## Duplicate job

If you want to use a job that already exists as a guide, you can simply duplicate the job (**Duplicate job**).

You can select the job with a double click, and then adapt and save it in the corresponding job dialogue. Alternatively, you can select the jobs in the job list and adapt it in the Ribbon Bar under Edit.



Editing jobs

## Changing a Job

You can change a job by selecting it in the job view and clicking the **Edit** button in the Ribbon Bar under **Jobs and Reports**. The O&O Defrag job dialog will appear with the options for that job. Change the settings you wish and then confirm this by clicking **OK**. If you don't want to apply the changes, simply click **Cancel**.

You can find more explanation about the job options in the section "[Creating New Jobs](#)".

## Deleting a Job

Choose a job from the job list and select **Delete** under **Jobs and Reports**. The job will then be removed from the computer. Any job currently running will be automatically canceled.

## Work within the network

**Note:** this function is only valid for the O&O Defrag Server Edition.

The network function serves to control O&O Defrag from another computer in the network. You can build a connection to a computer of your choice and run all the program functions on it while operating by remote control.

O&O Defrag (Professional, Workstation or Server Edition) has to be installed on the target computer in order to create a connection. You also have to open port 50300 of your firewall of the target system. If you're using a firewall from another manufacturer, check with the respective program's Help.

**Note:** You will be able to operate within the range of comprehensive network functionality, if you add [O&O Enterprise Management Console](#). Further information is available in chapter "[Additional properties of the Server and Workstation Edition](#)" or simply contact us.

### More:

[Firewall settings](#)

[Establish connection within the network](#)

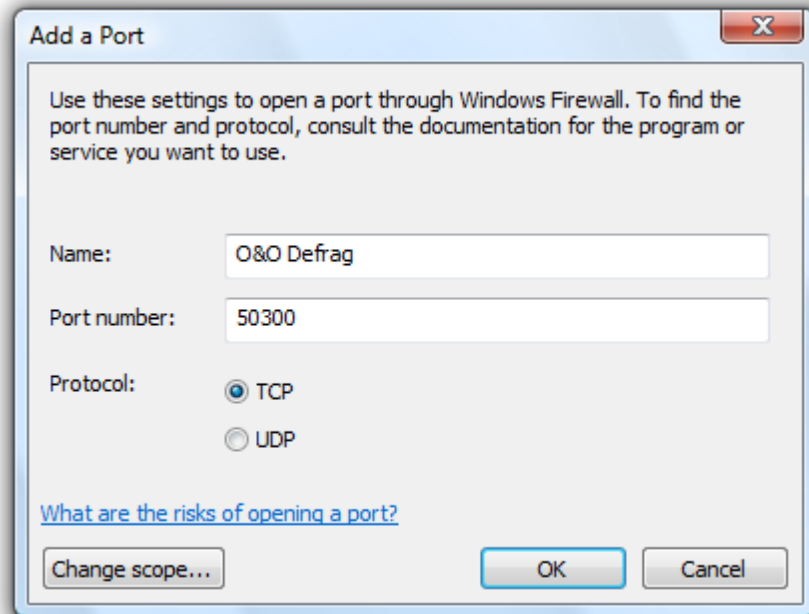
## Firewall settings

To build a remote network with another computer, you have to make the following changes to your firewall settings:

Hint: you can find the settings for the Windows Firewall on your computer under: **Start/Control Panel/Security Center/Windows Firewall/Change settings/Exceptions**.

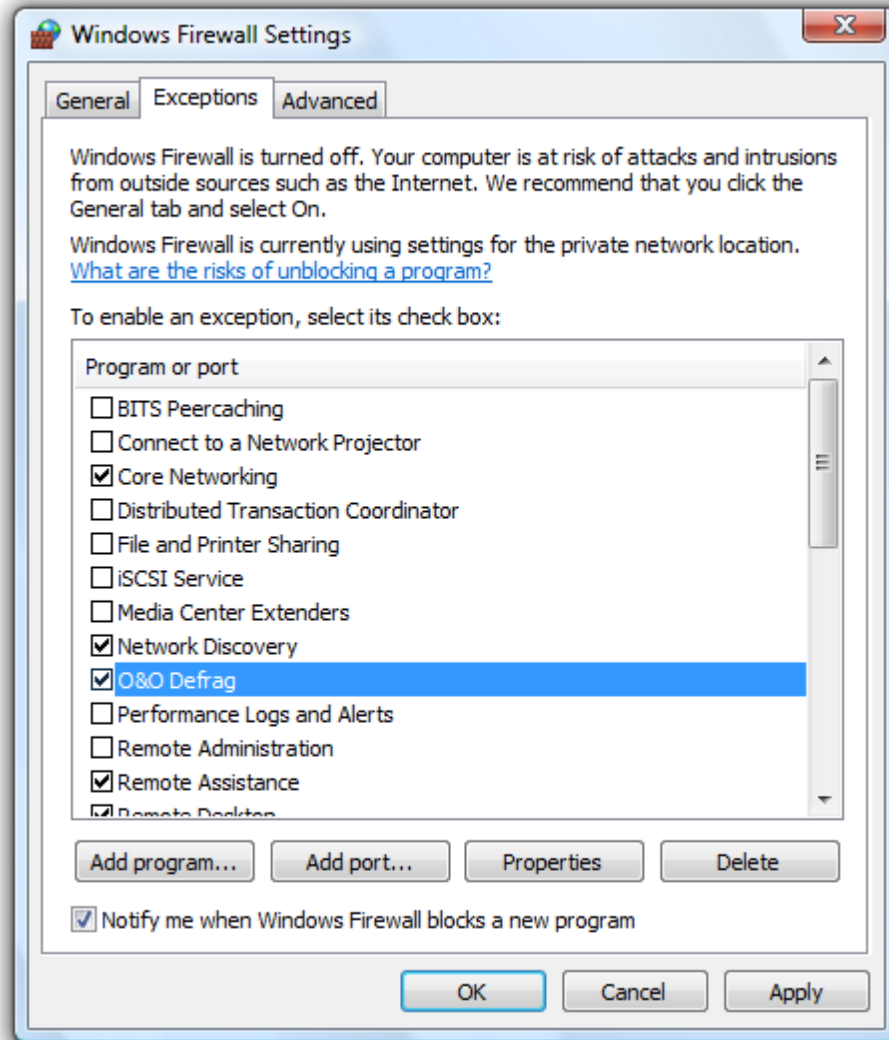
## Set up periodic defragmentation

- Create a new port.
- Enter the number **50300** and name the port **O&O Defrag**.



### Edit port

- Confirm the dialogue.
- Place a check next to **O&O Defrag** in the list.

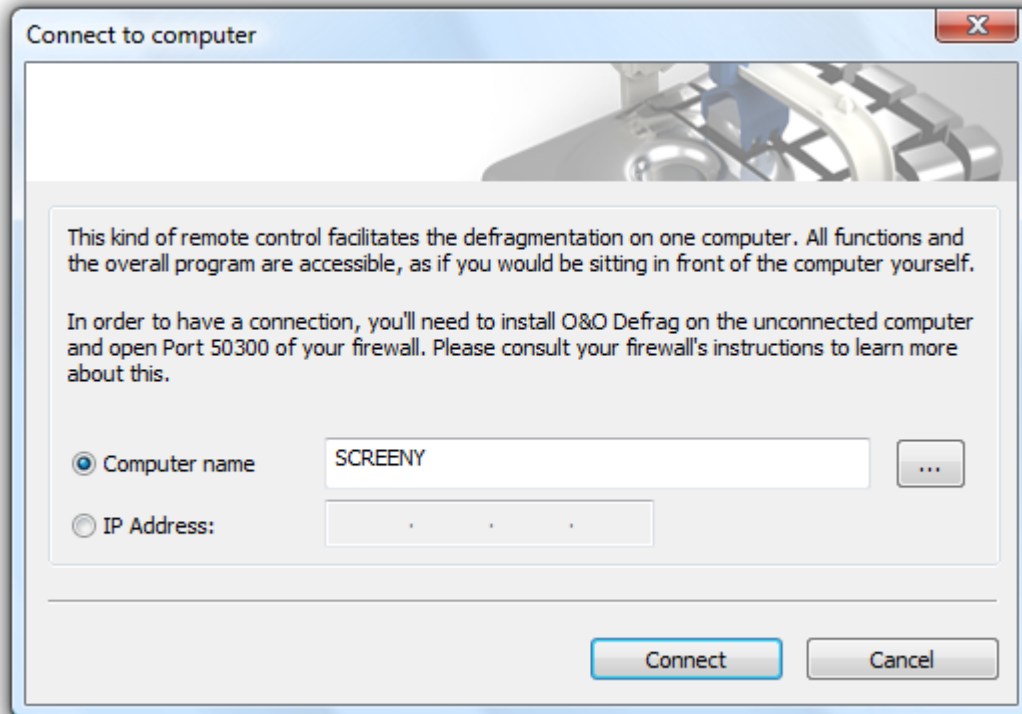


Firewall settings

## Connect to Network

1. To establish a connection with another workstation in the network click on **Network** in the Ribbon Bar.
2. Enter the name and/or the IP address of the target computer in the connection dialogue. Alternatively, you can also use the Search function, which lists all available computers.
3. Afterwards, click on **Connect** to set up a connection, or on **Cancel**, if you want to exit the dialogue.
4. If connecting was successful, you can execute all O&O Defrag functions you wish to perform on the target computer directly from your computer.

## Set up periodic defragmentation



Connect to network computer

## Status Reports

Status reports give you information on the condition of your computer or the computers in your network. They sum up the general information about a drive. They contain all the relevant information summarized about a drive. They include information such as the drive name, -size, file system. And also the list of fragmented files, level of fragmentation, recent actions, the time needed, etc.

The reports are HTML documents and can be read with any Internet browser.

### Status Reports Show Increases in Performance

Status reports all have a date and time of creation Which allows you to compare them and see how performance has improved.

## Creating Status Reports

Status reports are made after each analysis and each defragmentation provided you've enabled the creation of status reports. This can be done in the Settings dialog. The O&O Defrag agent can keep a maximum of 999 reports for one computer, after which the oldest reports will be replaced by newer ones.

- In the drive list, click the drive for which you wish to create a status report.
- Create the status report using **Create** in the Ribbon Bar (under **Jobs and Reports**).
- The drive will be analyzed Which you can see from the drive icon and the view of the progress.
- Once the analysis is finished, the status report will be automatically saved and displayed.

**Tip:** You can also create a status reports for several drives at the same time by holding the Ctrl key down and clicking the drives. Mark the various volumes by keeping the Ctrl key pressed while selecting.

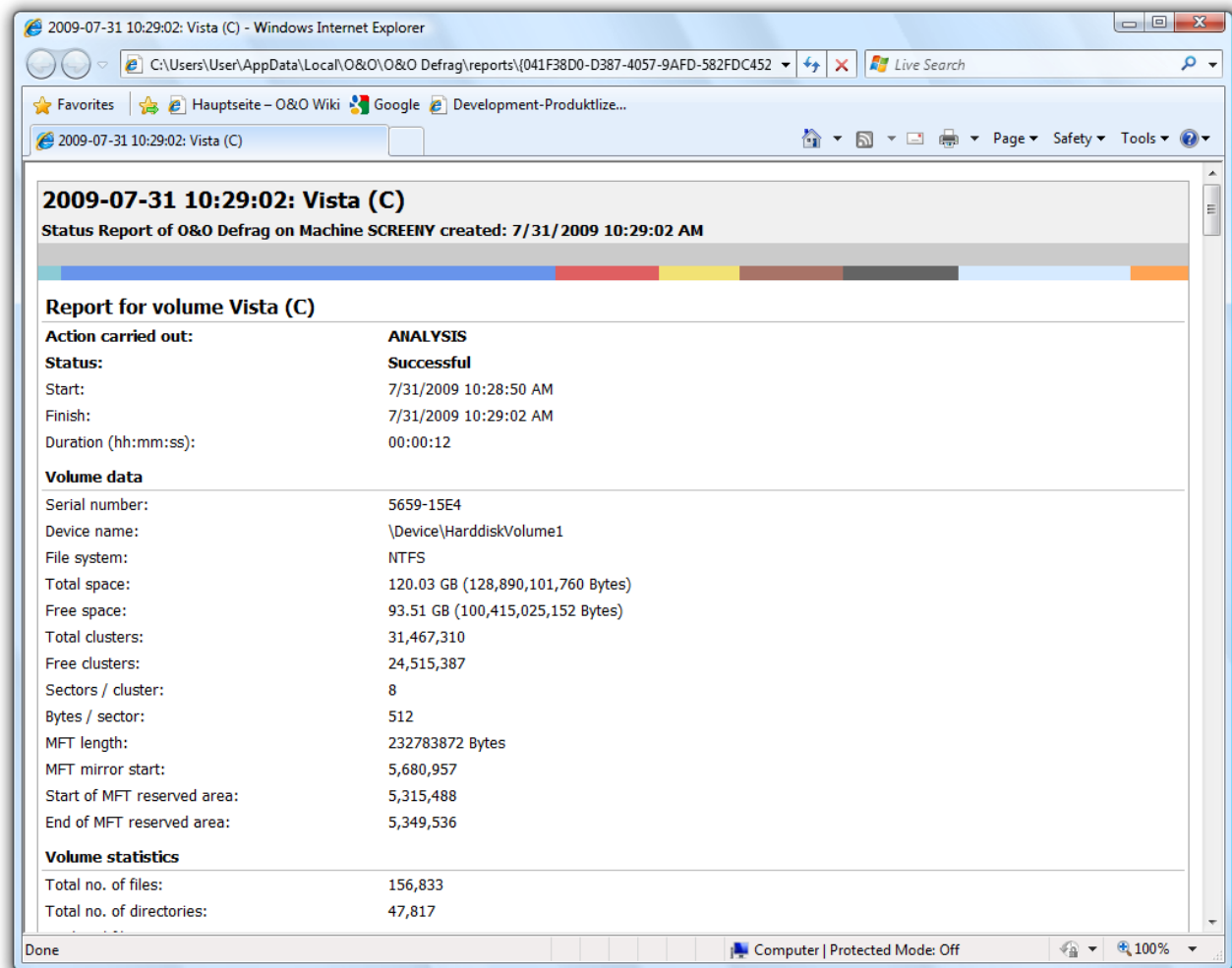
## Evaluating Status Reports

O&O Defrag status reports allow you to keep track of the fragmentation and defragmentation of a system. They contain all important information regarding your hard disk drives.

The level of fragmentation is particularly important As it represents a normalized fragmentation value which can be used for comparing hard disks having different sizes and using different systems. This value ranges from 0 (completely defragmented) to 100% (completely fragmented). It is best to have a lower value (below 5%). You can also use this value in jobs when defining a threshold for an automatic defragmentation.



## Status Reports



### Status Report

## Deleting Status Reports

Click on the report you wish to delete in the list of reports and launch the command by clicking **Delete** in the Ribbon Bar or by right-clicking the drive. The report will be removed from your system.

# Technical Information

The following technical information will be helpful when applying O&O Defrag:

**More:**

[Using the Command Line Version](#)

[Status Reports and Program Output](#)

[Data Security and Integrity](#)

[Supported Hardware](#)

[Supported File Systems](#)

[Free Space Needed for Defragmentation](#)

## Using the Command Line Version

You can also control the defragmentation by means of the command line version of O&O Defrag. In this way, you can also integrate O&O Defrag into scripts that you run at startup or login.

A start from the command line is not displayed in the main window. A mini O&O Defrag icon will appear in the task tray, and you can follow the progress of the actions in your DOS prompt.

O&O Defrag runs independently of the main user interface and the DOS prompt in the background. If you close the DOS prompt or cancel the command line tool with Ctrl+Break/Ctrl+C, you can choose whether to end the program or have it continue in the background. You can also cancel the processes later by using the STOP-command.

**Tip:** If you start O&O Defrag from the command line, you can also start the main user interface later. This will show you the status as usual without interrupting or stopping the running processes.

**More:**

[Call](#)

[Parameters](#)

### Call

The following list shows you the possible parameters for the command line version.

**OODCMD** {C:[,] | ... | Z:} | {/{<COMMAND>}:{C:[,] | ... | Z | ALL}}  
[/OUTPUTFILE:<File name>] [/SILENT] [/NOHEADER] [/NOWAIT] [/WAITKEY]

<COMMAND> must be one of the following volume commands:

ANALYSIS, OPTIMIZE, QUICK, COMPLETE, COMPNAME, COMPACC, COMPMOD, FRAGFILES,  
SPACE, STEALTH

## Parameter

Syntax	Description
/ANALYSIS:{C[,]   ...   Z   ALL}	Analyzes the given drives. The result will be shown in the standard output device (generally the DOS prompt) or written into the output file.
/OPTIMIZE:{C[,]   ...   Z   ALL}	Starts OPTIMIZE defragmentation on the given drives or on all drives (ALL).
/QUICK:{C[,]   ...   Z   ALL}	Starts OPTIMIZE/QUICK defragmentation on the given drives or on all drives (ALL).
/COMPLETE:{C[,]   ...   Z   ALL}	Starts OPTIMIZE/Complete defragmentation on the given drives or on all drives (ALL). Please bear in mind that the defragmentation method does not support any drive zones.
/COMPACC:{C[,]   ...   Z   ALL}	Starts COMPLETE/Access defragmentation on the given drives, or on all drives (ALL). Please bear in mind that the defragmentation method does not support any drive zones.
/COMPMOD:{C[,]   ...   Z   ALL}	Starts COMPLETE/Modified defragmentation on the given drives, or on all drives (ALL). Please bear in mind that the defragmentation method does not support any drive zones.
/COMPNAME:{C[,]   ...   Z   ALL}	Starts COMPLETE/Name defragmentation on the given drives or on all drives (ALL). Please bear in mind that the defragmentation method does not support any drive zones.
/FRAGFILES:{C[,]   ...   Z   ALL}	Analyzes the given drive and lists the fragmented files. The result will be shown in the standard output device (generally the DOS prompt), or written into the output file.
/INFO:{C[,]   ...   Z   ALL}	Shows the drive information for the given drives or for all drives (ALL).
/NOHEADER	Stops the display of program information when the program is started from the DOS prompt.
/NOWAIT	Starts the given operation and ends the command line program immediately. The operation runs in the background. This is useful if you want to start an operation with a multiple file, but don't wish to wait until this process has finished.
/OUTPUTFILE:<File name>	All output will be redirected to a file with the given path and name.
/SILENT	No output is being displayed.

Syntax	Description
/SPACE:{C[,]   ...   Z   ALL}	Starts SPACE defragmentation on the given drives or on all drives (ALL). Please bear in mind that the defragmentation method does not support any drive zones.
/STEALTH:{C[,]   ...   Z   ALL}	Starts STEALTH defragmentation on the given drives or on all drives (ALL). Please bear in mind that the defragmentation method does not support any drive zones.
/STOP:{C[,]   ...   Z   ALL}	Stops all processes (analysis, defragmentation etc) on the given drives or on all drives (ALL).
/WAITKEY	Waits for a keystroke before ending the command line program (once the operation has ended).

## Status notices and program output

More:

[Event logging of Online Defragmentation](#)

[Notices from Offline Defragmentation](#)

### Event Logging of Online Defragmentation

O&O Defrag logs the events in the system application log (Event viewer) according to the option you have chosen.

How to start the event viewer when running Windows:

- To open the **Event Viewer** open the Control Panel of your computer and double-click **Administrative Tools** and then **Event Viewer**.

### Notices from Offline Defragmentation

The following table contains a list of all possible outputs from the offline defragmentation, along with an explanation.

Ouput	Type	Explanation
<b>OK</b>	STATUS	The given file was successfully defragmented.
<b>Already defragmented</b>	STATUS	The given file has already been defragmented.
<b>Drive xyz could not be opened</b>	ERROR	The given drive could not be found by the system, or the file system is not supported.
<b>Could not open drive</b>	ERROR	An internal error has occurred, suggesting a lack of free space or wrong registry entries for the boot time defragmentation.

Ouput	Type	Explanation
<b>Could not open file</b>	ERROR	The given file could not be found, is encrypted or has been exclusively locked by the system.
<b>Not enough space to move</b>	ERROR	Contiguous free space is required to move a file somewhere else on the disk, and this amount of space must be at least as large as the file. The defragmentation cannot take place because there is not enough free space available.
<b>Could not be moved</b>	ERROR	The defragmentation failed because of problems with the file system. The file is still fragmented.
<b>MFT could not be defragmented</b>	ERROR	The defragmentation of the MFT failed because of problems with the file system. It is still fragmented.
<b>Not enough space to move the MFT</b>	ERROR	In order to defragment the MFT, contiguous free space at least as large as the MFT must be available. The defragmentation cannot be run because there is not enough free space available.
<b>Could not write to partition</b>	ERROR	During the MFT defragmentation, a file system error occurred which blocked writing on the disk. The MFT has not been changed and is still fragmented. The drive should be checked for errors.
<b>Attribute error in the MFT. Please start chkdsk.</b>	ERROR	Erroneous entries in the MFT were found during the defragmentation. The drive should be checked for errors.

## Data Security and Integrity

O&O Defrag guarantees you complete data integrity and security. Only functions that are implemented by Windows and their operating systems are used by the defragmentation and synchronize all files accesses with each other.

File attributes (Date, Time, System, Archive etc.) and the security settings for NTFS drives will not be changed. Access rights also remain unchanged. In addition, only one file per drive will be processed at any one time. This ensures that even in a worst case scenario, only one file will be lost (e.g. if there is a power cut). If you have any further questions about data security or need more information, please don't hesitate to [contact us](#).

## Supported Hardware

O&O Defrag supports all hardware components that are also supported by Windows. Please note the software requirements of the corresponding manufacturer.

As a rule: if you can access your hardware with Windows as you would a normal Windows partition and this partition is formatted using a supported file system, then this hardware can be defragmented. Exceptions are removable drives such as CD-RWs, or streamers – as it makes little sense to defragment such drives.

**More:**

[RAID](#)

## RAID

O&O Defrag supports all known RAID systems. According to many hardware manufacturers, defragmenting RAID systems is especially important – as their files are spread over several hard disks, their fragmentation level is likely to be very high.

## Supported File Systems

O&O Defrag supports all Windows file systems although certain conditions must be respected in order for O&O to work without any problem. The following paragraphs will tell you more about each of these file systems.

:

File System	Explanation
<b>exFAT</b>	ExFAT file systems are also supported for Windows 7, which was designed by Microsoft considering flash drives. It delivers a better performance than FAT and is much more secure against structural damages to the file system and data loss.
<b>FAT</b>	FAT is the oldest data system, the roots of which go back to MS DOS. It is supported by Windows. O&O Defrag can be used without any problem on FAT drives.
<b>FAT32</b>	FAT32 is the native file system of Windows 95b/98/Me. It offers certain advantages when compared to the old FAT. FAT32-Laufwerke werden von Windows standardmäßig unterstützt und können mit O&O Defrag problemlos defragmentiert werden.
<b>NTFS</b>	<p>The NTFS file system is the continuation of FAT for Windows. It provides security restrictions for accessing data and offers a higher level of security regarding file errors, and faster data access.</p> <p>It is native supported. O&amp;O Defrag is able to achieve the best defragmentation results on NTFS drives.</p>
<b>Volume-, Stripe-, Mirror-Sets and Hardware-RAID</b>	Volume-, Stripe-, Mirror-Sets and Hardware-RAID
<b>EFS</b>	Windows 2000 introduced a new file system based on NTFS and with a higher level of data security against unauthorized access and

File System	Explanation
	abuse. The Encrypted File System (EFS) leaves files unreadable for non-authorized users. O&O Defrag supports EFS hard drives and does not change or disturb the data integrity and security of these files.

## Free Space Needed for Defragmentation

The following limitations are valid for O&O Defrag and are caused by Windows. They cannot be bypassed without endangering the integrity of your files.

### More:

[Size of the Allocation Units](#)

[Size of Drive](#)

[Folders](#)

[Free Hard Disk Space](#)

### Size of the Allocation Units

The size of the allocation units on NTFS drives on Windows 2000 has to be equal to or smaller than 4096 Bytes. NTFS drives with larger clusters cannot be defragmented. The size of the allocation unit cannot be changed after Windows has been formatted. You will, however, find third party tools which give you this possibility.

**Note:** These limitations were removed with Windows Vista/XP and Windows 2003 so that all drives, regardless of the size of their allocation unit, can be defragmented.

### Size of Drive

All drive sizes supported by Windows are supported by O&O Defrag.

O&O Defrag was optimized for use on file systems having an especially large number of files. The storage capacity of a drive is therefore irrelevant.

### Folders

Any number of folders can be defragmented. O&O Defrag has an optimized memory management which allows it to record all file and folder information.

### Free Hard Disk Space

Drives without any free disk space cannot be defragmented. For the best possible results, at least 5% of the whole hard disk capacity should be free. It might not be possible to defragment files larger than the available free and contiguous disk space.

To speed up the defragmentation process, we recommend you keep about 10 to 15% of free space available on your hard disk, although the larger the hard disk, the smaller this percentage will be. What really

matters is the size of the largest file which needs to be defragmented or moved around - for a file like this, you must have enough contiguous free space available.



# Recommendations and Frequently Asked Questions

## Defragment your system regularly!

Only defragmentation on a regular basis can ensure that you always get the best out of your system! O&O Defrag offers you the best way of planning an optimum defragmentation of your system.

### Recommended use defragmentation plan

Recommendation for:	Manual defragmentation	Background Monitoring	Screensaver-Job	Scheduled jobs	AutoJob (O&O One-Click Defrag)
Game computer operating for hours	++		+		
Private Desktop PC	+	++	+		
Workstation Desktop	+	++	+	+	+
Workstation	+	+	++	+	+
Notebook running on battery		+			
Video cut, Hard-disk Recording	++		+		
Server with large files(>4 GB)	+			++	
Server with many files (> 1 Mio)	+			++	



Well suited



Very well suited

For constantly running **gaming computers** we recommend manual defragmentation. Only the gamer himself can decide when he can bear to lose system performance due to defragmentation. We also recommend to disabling the background monitoring function during the gaming session.

For a **regular desktop PC**, where mainly Internet or office applications are used, or even some games are played, we recommend to keep the default set up of O&O Defrag 12. Background Monitoring makes sure that your system is always working at its highest capacity – without your involvement.

For **office computers** with a medium performance requirement, the same applies as for a private desktop PC: We recommend to keep the default set up of O&O Defrag 12 as it is.

With **video editing or hard disk recording systems** the data throughput of the disk subsystem plays a decisive role. In particular with hard disk recording systems, some unwanted failures might occur, which can render an entire recording session useless. We recommend manual defragmentation of drives before and after a session. Please don't use Background Monitoring or the automatic schedule for jobs, since your drives might be scanned while you are working!

For **Servers** used heavily during the week or in daytime, we recommend a nightly job which runs an Optimize/Quick as well as a complete Optimize on the weekend.

### **Don't wait too long before you defragment!**

As soon as you've installed your operating system, the file system will begin to fragment. Avoid reduced performance right from the beginning and install O&O Defrag in right away! Only then can you be sure that your hard disks can access your files quickly. You will also avoid unnecessary wear and tear on your hardware due to increased movement of the read/write head.

### **Avoid moving large numbers of files during defragmentation**

O&O Defrag will calculate the best position for your files before and during the defragmentation. If you copy, move or delete files, these calculations will have to be carried out again. This will take time and lengthen the defragmentation time. Please keep this in mind!

### **Automatic defragmentation with the threshold tool**

Along with its default background monitoring, O&O Defrag offers you the option of automatically defragmenting your system using a schedule. You can additionally increase your system's performance by defining threshold values for your defragmentation. This means that defragmentation will only take place when a particular degree of fragmentation is reached. You can thereby avoid unnecessary defragmentation runs. In the job dialogue under **Drives**, just enter a degree of fragmentation, e.g., 5%, upon which the job should be run.

### **O&O Defrag on notebooks**

We have introduced a new kind of power management in the latest version of O&O Defrag. This allows you to suppress defragmentation runs when your notebook is running from battery power. The length of your battery's life will therefore not be affected and you won't have to stop the defragmentation manually. O&O Defrag recognizes the switch between main and battery power and will run the defragmentation according to your own configuration. You can read more on this in the section about [Settings](#).

### **Which defragmentation method for which type of system?**


Below, you will find several pieces of advice concerning which method is the best for your system. Search for the relevant tip and use this to determine the best defragmentation method for you!

**New Methods O&O Defrag 12**

**Previous methods O&O Defrag  
11**

	Optimize	Optimize/ Quick	Optimize/ Complete	Space	Stealth	Complete/ XYZ
Defragmentation of files	+++	+++	+++	+++	+	+++
Defragmenting the free space	+++		+++	+++		+++
Prevention of further fragmentation	+++	+	+++	+		+
Results of high-level fragmentation*	+++	+	+++			+
Suitability for very large files (> 4 GB)	+	+	+		+	
Suitability for many files (> 1 M)	+	+++		+	+++	
Run time of first defragmentation**		+		+	+++	
Run time of repeated defragmentation	+++	+++		+	+++	
RAM-Bedarf	+	+++		+	+++	
CPU-Last	+	+++		+	+++	

 well suited (with runtime: quick)

 very well suited (with runtime: very quick)

### Continue working undisturbed while defragmenting

Particularly in the case of workstations or servers that are under pressure all the time, it is important that defragmentation take place in the background without negatively affecting the day-to-day running of the system. In such situations, we recommend you use O&O ActivityGuard Pro for keeping an eye on the resource usage and automatically adjusting the burden placed on your system by O&O Defrag.

O&O Defrag and Firewalls

When I start O&O Defrag my firewall tells me that someone is trying to access my hard drive and I receive Error Message "10061". Why is this and how can I solve the problem?

The communication between the components of O&O Defrag (e.g. the Agent and the GUI) is based on TCP/IP. This communication takes place only internally, and doesn't access the internet. Most firewalls, however, are programmed to recognize internal IP communication, so you receive a warning message.

You don't have to turn off your firewall! Simply open up port 50300. Since O&O Defrag automatically checks access permissions, there can be no external access over this port even if you are connected to the internet.

In most cases, it is enough to authorize O&O Defrag for exclusively internal communication when the software is started for the first time.

If this did not happen, however, including the files OODAG.EXE and OODCNT.EXE on your firewall's list of trusted programs has also proven successful with all of the firewalls we have tested.

Please consult your firewall's documentation for precise configuration procedures.

**Note:** If you have configured your firewall accordingly and are still receiving Error Message "10061", please verify that the services "O&O Defrag" and "Event Viewing" are enabled. If this is not the case, please enable these services.

## Support and Contact

To receive more information about O&O Defrag, please visit our website, <http://www.oo-software.com>, and get the latest information about product developments and support. Also included on our website are regularly updated FAQs and Knowledge Bases that address the most common problems and questions regarding our products.

All registered customers receive installation and product support free of charge for the first 90 days after registration. When contacting our support department, please remember to have your registration code available.

In addition, it may be helpful to read our frequently asked questions (FAQ) section of our website before you contact our support department. It is always possible that your specific question or problem may have already been addressed.

### O&O Software GmbH

Address: Am Borsigturm 48  
13507 Berlin  
Germany

Telephone: +49(0)30 4303 4303

Fax: +49(0)30 4303 4399

Web: <http://www.oo-software.com>

E-Mail: [sales@oo-software.com](mailto:sales@oo-software.com)

[support@oo-software.com](mailto:support@oo-software.com)

## Authorized Resellers

For answers to all questions regarding the licensing and purchase of our software products, our authorized reseller partners in over 30 countries stand ready to assist you. Their names and addresses may be found on our website under the 'Purchase' heading. We would also be more than happy to assist you in finding the partner closest to you.

# End user license agreement 2.1 (EULA)

O&O Software

General and Specialized Section

## General Section

IMPORTANT – PLEASE READ CAREFULLY

This End User License Agreement (EULA) is organized into 2 sections: a general part, which is valid for all O&O products, and a specialized part, which includes the particular terms of each corresponding product. By accepting both parts of the license terms they automatically form part of your contract with O&O Software, Am Borsigturm 48, 13507 Berlin. If you have any questions regarding this contract and the license terms, our Service Team is available to help you under [info@oo-software.com](mailto:info@oo-software.com).

The software product is protected by copyright laws and international copyright contracts as well as other laws and agreements concerning intellectual property.

### 1.Object and form of delivery

- (1) You receive the software covered by the contract in executable form (Binary code) together with the relevant documentation released by O&O according to Section (6).
- (2) The software provides the range of functions described in the given documentation. The documentation regarding functionality may be consulted prior to concluding the contract in the internet presentation on the following site <http://www.oo-software.com/>.
- (3) Delivery will be made according to the way in which you have purchased the software, either by having a disk directly handed over or sent by mail to an address you have supplied or through the forwarding of license as well as any required download information to a given E-mail address.
- (4) If you are currently receiving updates as part of a maintenance agreement, these will continue to be supplied in the same way as the initial software delivery, i.e., for a disk sent by mail, a disk containing the update will be sent to the given address: for electronically delivered keys, a key for downloading updates will be sent to the given E-mail address.
- (5) Changes to the delivery or E-mail address can only be taken into consideration when they are supplied in writing or by E-mail to the address or E-mail address indicated on <http://www.oo-software.com> at least two weeks before delivery of the update.
- (6) A printed copy of the documentation will not be included in delivery. The documentation consists primarily of electronic aids.

### 2.Requirements for application (system requirements)

- (1) Installation of the software is not part of the agreement.
- (2) Depending on the software, there are certain system requirements that must be met in order to use the software according to the terms of this contract. These will be defined according to each product in the specialized section of this contract.

### 3.Rights of use, including test versions, unauthorized transfer, and application

(1) O&O grants you, upon payment of the agreed one-time fee, a permanent, spatially unlimited and non-exclusive right to use the software.

(2) Test versions – if you have installed a test version of one of our products taken from the O&O Website <http://www.oo-software.com/>, the right of use will be, according to the program, for a limited time only and/or technically restricted.

(3) One copy of the software is entitled to be used on a maximum of one (1) output device/workstation simultaneously.

(4) If you want to use the software on more than one output device/workstation, the rights of use must be extended accordingly. To find out which O&O products are also available as volume licenses, please consult (<http://www.oo-software.com/>). The separate price list concerning O&O Volume Licenses will apply to extending the rights of use without redelivery.

(5) Any use beyond that agreed upon in the contract is one in violation of the contract. In such a case, you are required to report this use that exceeds the rights of use to the supplier without any delay. The parties will then try to bring about an agreement for extending the rights of use. For the duration of the excessive usage, i.e., until the conclusion of such an agreement or the cessation of the excessive usage, you are required to pay compensation for this excessive usage according to the amount indicated in our price lists. The amount of compensation will be calculated on the basis of a four year, straight-line depreciation. If we are not informed of the excessive usage, a contract penalty in the amount three times the price of the usage indicated in the price list will be due O&O.

(6) You are entitled to create a backup copy of the software and to conduct ordinary data backups. The creation of more copies than the amount needed for the backing up of any future usage (including the backup copies and data backups) is not allowed.

(7) Copyrights and other trademarks within the software may not be altered or removed. They must be transferred onto every copy of the software.

(8) Unauthorized transfer – only when you have purchased the software with an accompanying disk are you permitted to transfer it and then, only under the following conditions: a resale of the software is only permitted when it involves an entire software copy, i.e., by surrendering your own usage of the purchased copy, you are entitled to transfer these rights of use of the disk onto a third party according to the terms of the agreement existing between you and O&O. When making such a transfer, you are required to hand over to the third party all materials related to the software that are covered in the contract and to delete the software from any storage volumes (e.g., hard disks) remaining in your possession.

(9) Unauthorized rental and service – The purchase of this contract does not entitle you to any public transfer or rental of the software. You are also not entitled to include the software as part of your providing services for and in the presence of any third parties. You may purchase an appropriate license from O&O for doing this.

#### **4.Payment**

(1) The prices are given with the corresponding sales taxes included, unless otherwise indicated.

(2) Test versions – Downloads of test versions offered by O&O are provided free of charge, unless otherwise indicated.

(3) If you receive updates of your programs as part of a Maintenance Agreement, the terms of payment in these contracts will apply to these Maintenance Agreements.

(4) O&O is entitled to forward any data it has received onto third parties requiring it for purposes of collection.

(5) Until payment is made in full, O&O retains possession of all rights, particularly those concerning copyrighted rights of use, on the materials included in this contract. O&O is specifically entitled to cancel a contract, for example, when your payment is delayed, it prohibits the further using of the software and demands the surrendering of all copies or this being impossible, to demand their deletion. Should a third party have access to the object of purchase before payment is completed for the contractual software, you are required to inform this third party about the object being the property of O&O and to inform O&O, in writing, about the third party's access.

#### **5. Material defect and defect of title**

(1) The software package or download you receive is free of any material defect or defect of title.

(2) A material defect exists when the software is unable to be used as described in the documentation appearing on the website and included in delivery or available for downloading.

O&O is constantly checking to make sure that other sources are not misrepresenting the functions and properties of the software as described in the documentation. You can therefore assume that any descriptions beyond those found in the software documentation have not originated with O&O and are also unknown to it. Please inform O&O if you learn of any software descriptions that include functions and properties not mentioned in the documentation.

(3) Please inform O&O if you learn of any software descriptions that include functions and properties not mentioned in the documentation.

(4) Any claims concerning defects of material and/or title related to the software have a limitation period of two years subsequent to delivery of the program or transmission of the serial number needed for downloading. If you are not a private individual, the warranty period is shortened to one year.

If O&O has fraudulently concealed a material defect, a three year limitation period will cover claims related to this defect.

Payment for compensation that you might have been entitled to as a result of cancellation or an abatement can be refused upon expiration of the limitation period.

(5) You are required to inform O&O, in writing if possible, of any defects that arise immediately upon their discovery. While doing so you should also describe, as well as possible, how the defect is communicated, the effect it has on the program, and under which circumstances it occurs.

(6) Should defects be reported to O&O within the limitation period, it will undertake a cure free of charge.

(7) As part of the cure, the corrected software will be redelivered as agreed. An on-site analysis and correction of the error on your system will not take place.

O&O assumes the ensuing expenses for the cure, in particular the costs for transport, labor, and material. You are personally responsible for installation. O&O specifically does not assume on-site installation as part of its obligation with regard to defects of material or title.



Should a change of the program be required as part of the cure, O&O will make the necessary changes in the documentation without any charges.

(8) After the unsuccessful expiration of a deadline you set for cure, you can cancel the contract or reduce the purchase price and demand compensation instead of service or the replacement of any futile expenditures.

(9) A deadline is not required when

- a) O&O refuses both kinds of cure, even if it is entitled to do so as a result of the arising expenses or
- b) the cure is impossible or
- c) the cure is unacceptable to you or
- d) the cure is unsuccessful.

A subsequent improvement is considered a failure after the second unsuccessful attempt unless there is something particular about the type of software or the defect itself or the surrounding circumstances that would indicate otherwise.

(10) You are not entitled to cancel the contract if the defect is negligible, nor may you, in this event, demand compensation instead of full service.

(11) In the event of cancellation, compensation is due for any uses made. The compensation for use will be based on a four year, straight-line depreciation of the purchase price.

(12) As a result of the abatement, the purchase price will be reduced by the amount which is calculated for deducting the defect from the value of the software. The standard used will be its value at the time the contract was concluded. The amount, when necessary, is to be calculated by estimation. As a result of this reduction, any amount larger than that paid for the reduced purchase price will be refunded.

If it turns out that a reported problem did not arise as a result of a defect in the software and if you can be accused of malice or gross negligence, then O&O is entitled to invoice you for: 1) services; 2) the expenses for analysis and; 3) correction of the problem, according to the amount stated in the price list.

(14) The seller's warranty is canceled when changes are made on the software without expressed written consent or when the software is not used as intended or used in an improper software environment, unless you can prove that these facts had nothing to do with the problems that occurred.

## **6.Limitation of compensation**

(1) O&O is liable for compensation for every legal ground to the extent described in the following provisions.

(2) The extent of liability of O&O for damages caused by malice or gross negligence arising from O&O itself or one of its vicarious or legal agents is unlimited.

(3) There is no limit to the extent of liability of O&O or any of its legal or vicarious agents for damages involving injury to life, physical well-being or health, or for simple breach of duty.

(4) There is unlimited liability for damages caused by serious organizational fault on the part of O&O as well as for damages arising from a missing guaranteed characteristic.

(5) For the breach of an essential contractual duty, O&O is liable for damages normally foreseen in a contract when none of the instances in provisions (2) – (4) applies.

(6) Any further liability for compensation is excluded, specifically excluded is liability without fault.

(7) Liability as defined by the product liability law remains untouched.

(8) If damage can be traced to have arisen through a fault on the part of O&O as well as on the part of yourself, you must have your share of the fault evaluated.

You are responsible for making a standard backup of your data at least once a day. For data loss caused by O&O, O&O is only liable for the expense of duplicating the data on your backup copies that need to be created and for the restoration of data which would have also been lost during a standard backup procedure.

## **7.Final provisions**

(1) You may only balance claims from O&O with indisputable or legally valid claims.

(2) Changes and amendments to this contract must be made in writing. This also applies to changes to this provision.

(3) The contract is subject to German law. The uniform UN purchasing law (CISG) as well as the UNIDROIT Factoring Agreement of Ottawa do not apply.

(4) Any general terms and conditions on your part will not be applied.

In the event you are not a private individual or a resident of the Federal Republic of Germany, we agree that the district court in Berlin will be the competent court for litigation arising from this contract.

## **8. Contact**

If you have any questions concerning the O&O Software License Agreement or wish to speak with O&O, please get in touch with us.

O&O Software GmbH, Am Borsigturm 48, 13507 Berlin, Germany.

Telephone: +49 (0)30 4303 4303, Fax: +49 (0)30 4303 4399

E-Mail [info@oo-software.com](mailto:info@oo-software.com) / [sales@oo-software.com](mailto:sales@oo-software.com), Web [www.oo-software.com](http://www.oo-software.com)

## **Special section**

### **O&O BlueCon**

Important note on the Windows PE Start CD

The Microsoft® Windows™ Preinstallation Environment contained in this hardware or this software may only be used for starting, diagnosing, setup, restoration, installation, configuration, testing or disaster recovery.

NOTE: THIS SOFTWARE CONTAINS A SECURITY FEATURE THAT WILL CAUSE END USER'S SYSTEM TO REBOOT WITHOUT PRIOR NOTIFICATION TO THE END USER AFTER 72 HOURS OF CONTINUOUS USE.

Amendment to: 2. Requirements for application (system requirements)

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

The product at hand can only be employed according to the acquired license. The following license types exist for O&O BlueCon:

#### O&O BlueCon Admin Edition

You are authorized to install and use the software product on all computers a) in the possession of the company (legal person or natural person(s) in the case of corporations) owning the license and b) all located at a single site. This license is bound to a single natural person and is non-transferable.

#### O&O BlueCon Tech Edition

You are authorized to install and use the software product on all computers. This includes computers that do not belong to the company owning the license (also known as Service Technician's License). This license is bound to a single natural person and is non-transferable.

### **O&O CleverCache**

Amendment to: 2. Requirements for application (system requirements)

#### O&O CleverCache Professional Edition

The software requires the Windows 2000 Professional or Windows XP (all Editions) or Windows Vista (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

#### O&O CleverCache Server Edition

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

### **O&O Defrag**

Amendment to: 2. Requirements for application (system requirements)

#### O&O Defrag Professional Edition

The software requires the Windows 2000 Professional or Windows XP (all Editions) or Windows Vista (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems. Control of the program through a network management is not possible.

#### O&O Defrag Workstation Edition

The software requires the operating systems Windows 2000 (all editions), Windows Server 2003 (all editions), Windows XP (all editions), Windows Vista (all editions), or Windows Server 2008 (all editions).

Usage within the terms of this contract is not achieved without the application of these operating systems. The O&O Defrag Workstation Edition may be used on computers with or without the user interface. You are entitled to control this program over the separately obtainable network manager.

#### **O&O Defrag Server Edition**

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems. The O&O Defrag Server Edition may be used on computers with or without the user interface. You are entitled to control this program over the separately obtainable network manager.

#### **O&O DiskImage**

##### **Important note on the Windows PE Start CD**

This note is only valid for the O&O DiskImage Professional and the Server Edition Start CD. The Microsoft® Windows™ Preinstallation Environment (Windows PE) is not a part of O&O DiskImage Express and the Workstation Edition!

The Microsoft® Windows™ Preinstallation Environment contained in this hardware or this software may only be used for starting, diagnosing, setup, restoration, installation, configuration, testing or disaster recovery.

**NOTE: THIS SOFTWARE CONTAINS A SECURITY FEATURE THAT WILL CAUSE END USER'S SYSTEM TO REBOOT WITHOUT PRIOR NOTIFICATION TO THE END USER AFTER 72 HOURS OF CONTINUOUS USE.**

Amendment to: 2. Requirements for application (system requirements)

##### O&O DiskImage Express Edition

The software requires the Windows 2000 Professional or Windows XP (all Editions) or Windows Vista (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems. Control of the program through a network management is not possible.

##### O&O DiskImage Professional Edition and Special Edition

The software requires the Windows 2000 Professional or Windows XP (all Editions) or Windows Vista (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems. Control of the program through a network management is not possible.

##### O&O DiskImage Workstation Edition

The software requires the operating systems Windows 2000 (all editions), Windows Server 2003 (all editions), Windows XP (all editions), Windows Vista (all editions), or Windows Server 2008 (all editions). Usage within the terms of this contract is not achieved without the application of these operating systems. The O&O DiskImage Workstation Edition may be used on computers with or without the user interface. You are entitled to control this program over the separately obtainable network manager.

##### O&O DiskImage Server Edition

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage

within the terms of this contract is not achieved without the application of these operating systems. The O&O DiskImage Server Edition may be used on computers with or without the user interface. You are entitled to control this program over the separately obtainable network manager.

Amendment to: 3. Rights of use, including test versions, unauthorized transfer, and application

Creation and restoration of images

The source computer and each target computer are required to hold licenses, to create and restore images using O&O DiskImage. One license is sufficient under the previously mentioned terms, if the source and the target computer is one non-virtual workstation. Each virtual machine is seen as an independent computer; in other words, each virtual machine needs its own license.

### **O&O DiskRecovery**

Amendment to: 2. Requirements for application (system requirements)

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

The product at hand can only be employed according to the acquired license. The following license types exist for O&O DiskRecovery:

#### O&O DiskRecovery Personal Edition

You are authorized to install and use the software product on only one computer. Other limitations may apply in the software itself. Please consult the software documentation for more information on these limitations.

#### O&O DiskRecovery Admin Edition

You are authorized to install and use the software product on all computers

a) in the possession of the company (legal person or natural person(s) in the case of corporations) owning the license and b) all located at a single site. This license is bound to a single natural person and is non-transferable.

#### O&O DiskRecovery Tech Edition

You are authorized to install and use the software product on all computers. This includes computers that do not belong to the company owning the license (also known as Service Technician's License). This license is bound to a single natural person and is non-transferable.

### **O&O DiskStat**

Amendment to: 2. Requirements for application (system requirements)

#### O&O DiskStat Professional Edition

The software requires the Windows 2000 Professional or Windows XP (all Editions) or Windows Vista (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

#### O&O DiskStat Workstation Edition

The software requires the operating systems Windows 2000 (all editions), Windows Server 2003 (all editions), Windows XP (all editions), Windows Vista (all editions), or Windows Server 2008 (all editions). Usage within the terms of this contract is not achieved without the application of these operating systems. The O&O DiskStat Workstation Edition may be used on computers with or without the user interface. You are entitled to control this program over the separately obtainable network manager.

#### O&O DiskStat Server Edition

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

#### **O&O DriveLED**

Amendment to: 2. Requirements for application (system requirements)

The software requires the operating systems Windows 2000 (all editions), Windows Server 2003 (all editions), Windows XP (all editions). Usage within the terms of this contract is not achieved without the application of these operating systems.

#### **O&O Enterprise Management Console**

Important note on the Microsoft SQL Server

This product uses the Microsoft SQL Server or Microsoft SQL Server Express Edition. To the extent that these programs are part of the installation of this product, the terms of their licensing related to the use of this software will also apply to the terms of this agreement.

The use of Microsoft SQL Server Express Edition is free of charge in conjunction with this product. The purchase of licenses for O&O Enterprise Management Console and related products is separate from any possible purchase of SQL Server products.

Amendment to: 2. Requirements for application (system requirements)

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

#### **O&O FormatRecovery**

Amendment to: 2. Requirements for application (system requirements)

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

The product at hand can only be employed according to the acquired license. The following license types exist for O&O

FormatRecovery:

#### O&O FormatRecovery Personal Edition

You are authorized to install and use the software product on only one computer. Other limitations may apply in the software itself. Please consult the software documentation for more information on these limitations.

#### O&O FormatRecovery Admin Edition

You are authorized to install and use the software product on all computers a) in the possession of the company (legal person or natural person(s) in the case of corporations) owning the license and b) all located at a single site. This license is bound to a single natural person and is non-transferable.

#### O&O FormatRecovery Tech Edition

You are authorized to install and use the software product on all computers. This includes computers that do not belong to the company owning the license (also known as Service Technician's License). This license is bound to a single natural person and is non-transferable.

### **O&O MediaRecovery**

Amendment to: 2. Requirements for application (system requirements)

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

### **O&O PartitionManager**

Important note on the Windows PE Start CD

The Microsoft® Windows™ Preinstallation Environment contained in this hardware or this software may only be used for starting, diagnosing, setup, restoration, installation, configuration, testing or disaster recovery.

NOTE: THIS SOFTWARE CONTAINS A SECURITY FEATURE THAT WILL CAUSE END USER'S SYSTEM TO REBOOT WITHOUT PRIOR NOTIFICATION TO THE END USER AFTER 72 HOURS OF CONTINUOUS USE.

Amendment to: 2. Requirements for application (system requirements)

#### O&O PartitionManager Professional Edition

The software requires the operating systems Windows 2000 (all editions), Windows Server 2003 (all editions), Windows XP (all editions), Windows Vista (all editions), or Windows Server 2008 (all editions). Usage within the terms of this contract is not achieved without the application of these operating systems.

### **O&O RegEditor**

Important note for working with the Microsoft Windows Registry

Before making changes to the Microsoft Windows Registry (in the following Registry), you should prepare a backup copy of the Registry and ensure that you'll be able to restore the Registry if a problem should arise.

O&O formally declares that it is not responsible for damages arising from the improper use of O&O RegEdit. Changes to the Registry should only be made by experienced users who are aware of the con-

sequences of such changes. A defective Registry can influence the entire stability of the system and lead to a crash of the computer or make it unable to start. This can further lead to loss of data.

Amendment to: 2. Requirements for application (system requirements)

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

Amendment to: 4. Payment

O&O demands no fee for the use of this license. In addition, a fee for this license and this program may not be demanded by any Third Parties, unless this is done with the expressed approval of O&O. When in doubt, please get in touch with us.

### **O&O RescueBox**

Important note on the Windows PE Start CD

The Microsoft® Windows™ Preinstallation Environment contained in this hardware or this software may only be used for starting, diagnosing, setup, restoration, installation, configuration, testing or disaster recovery.

NOTE: THIS SOFTWARE CONTAINS A SECURITY FEATURE THAT WILL CAUSE END USER'S SYSTEM TO REBOOT WITHOUT PRIOR NOTIFICATION TO THE END USER AFTER 72 HOURS OF CONTINUOUS USE.

Amendment to: 2. Requirements for application (system requirements)

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

The product at hand can only be employed according to the acquired license. The following license types exist for O&O RescueBox:

#### O&O RescueBox Personal Edition

You are authorized to install and use the software product on only one computer. Other limitations may apply in the software itself. Please consult the software documentation for more information on these limitations.

#### O&O RescueBox Admin Edition

You are authorized to install and use the software product on all computers a) in the possession of the company (legal person or natural person(s) in the case of corporations) owning the license and b) all located at a single site. This license is bound to a single natural person and is non-transferable.

#### O&O RescueBox Tech Edition

You are authorized to install and use the software product on all computers. This includes computers that do not belong to the company owning the license (also known as Service Technician's License). This license is bound to a single natural person and is non-transferable.

### **O&O SafeErase**



Amendment to: 2. Requirements for application (system requirements)

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

**O&O UnErase**

Amendment to: 2. Requirements for application (system requirements)

The software requires the Windows 2000 (all Editions), Windows Server 2003 (all Editions), Windows XP (all Editions), Windows Vista (all Editions) or Windows Server 2008 (all Editions) operating systems. Usage within the terms of this contract is not achieved without the application of these operating systems.

The product at hand can only be employed according to the acquired license. The following license types exist for O&O UnErase:

O&O UnErase Personal Edition

You are authorized to install and use the software product on only one computer. Other limitations may apply in the software itself. Please consult the software documentation for more information on these limitations.

O&O UnErase Admin Edition

You are authorized to install and use the software product on all computers a) in the possession of the company (legal person or natural person(s) in the case of corporations) owning the license and b) all located at a single site. This license is bound to a single natural person and is non-transferable.

O&O UnErase Tech Edition

You are authorized to install and use the software product on all computers. This includes computers that do not belong to the company owning the license (also known as Service Technician's License). This license is bound to a single natural person and is non-transferable.